SQL Manager.net™

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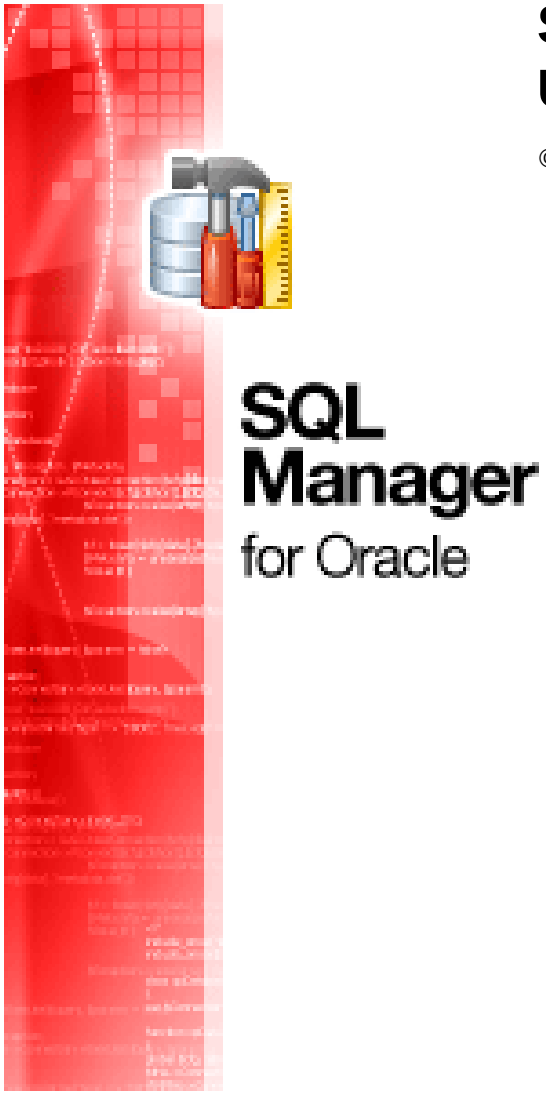

SQL Manager 2007 for Oracle User's Manual

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SQL Manager 2007 for Oracle
User's Manual

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This manual documents EMS SQL Manager for Oracle 1.5.x.x

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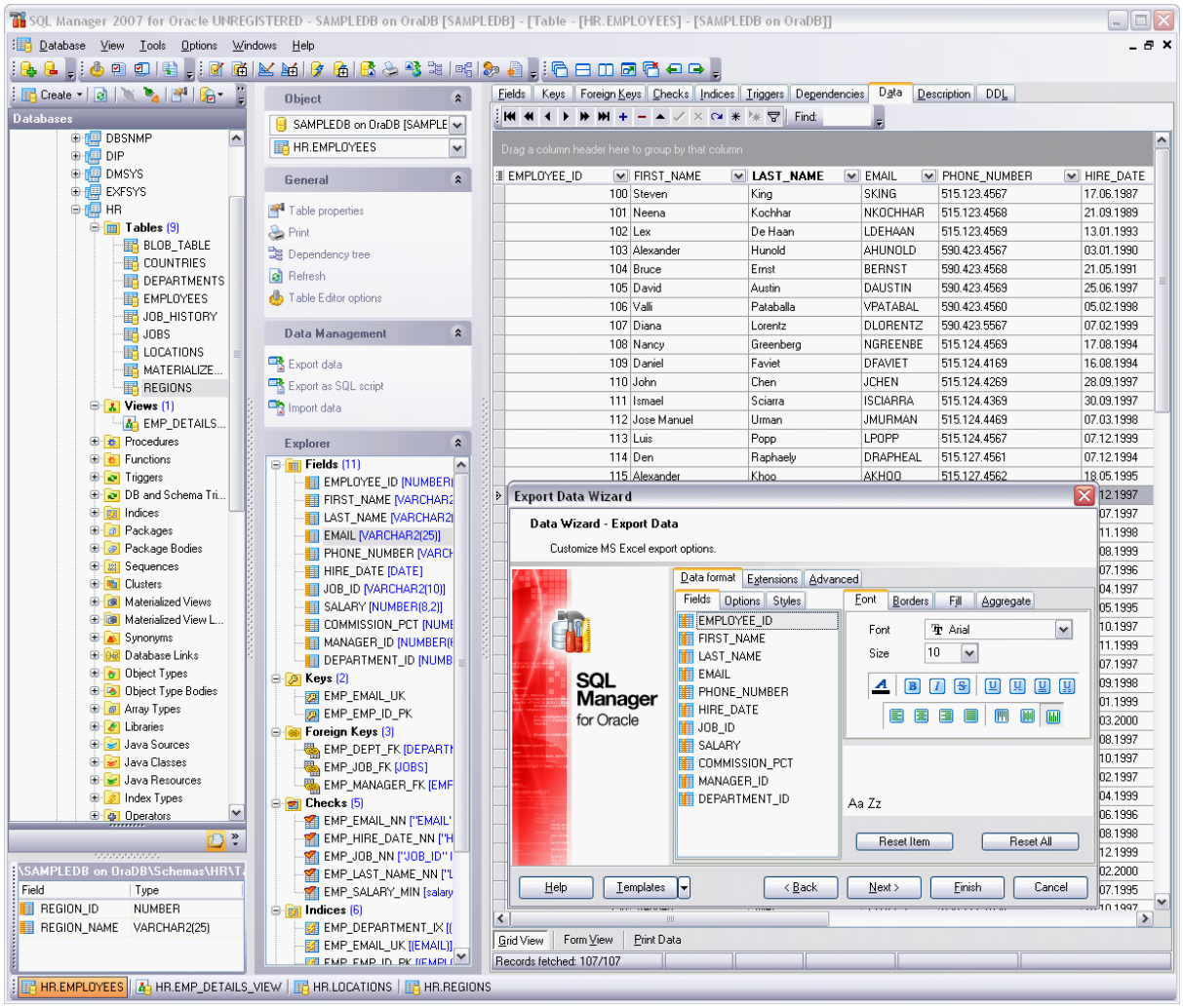
Part I

1 Welcome to SQL Manager 2007 for Oracle!

EMS SQL Manager 2007 for Oracle is a high performance tool for Oracle Database Server administration and development. SQL Manager for Oracle works with any Oracle versions from 8.1.7 to 10g and supports all Oracle objects and all Oracle data types including the new BINARY_FLOAT and BINARY_DOUBLE types, and others. It offers plenty of powerful tools for experienced users such as Visual Database Designer, Visual Query Builder, and powerful BLOB editor to satisfy all their needs. SQL Manager for Oracle has a state-of-the-art graphical user interface with a well-described wizard system, so clear in use that even a newbie will not be confused with it.

Visit our web-site for details: http://www.sqlmanager.net/


SQL Manager 2007 for Oracle UNREGISTERED - SAMPLEDB on OraDB [SAMPLEDB] - [Table - [HR.EMPLOYEES] - [SAMPLEDB on OraDB]]
Export Data Wizard
Data Wizard - Export Data
Customize MS Excel export options.
SQL Manager for Oracle

Key features:

Rapid database management and navigation

- Multiple host/database connections
- Registering selected databases to work with

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- Schema restriction to see only required schemas
- Projects to work with the selected database objects only
- Connecting via local port forwarding through the SSH tunnel
- Multiple user-defined tabs for any tree node to access it in one-click
- Working with multiple selected objects at a time
- Grouping/ungrouping registered databases

Easy management of all Oracle objects (including create/edit/ drop operations)

- Managing tables and all their subobjects: fields, primary, unique and foreign keys, indices, triggers, and check constraints
- Managing views and all their subobjects: fields, triggers, primary, unique and foreign keys
- Managing procedures, functions, sequences, packages and package bodies
- Managing users, roles, profiles, consumer groups and resource plans
- Managing database and schema triggers, clusters, synonyms, database links, materialized views and materialized view logs
- Managing object and array types, object type bodies, libraries
- Managing java sources, resources and classes
- Managing index types, operators, dimensions
- Managing contexts, directories, table spaces, rollback segments, redo log groups
- Managing jobs
- Duplicating database objects
- Viewing dependencies between database objects

Advanced data manipulation tools

- Powerful BLOB viewer/editor with several types of viewing BLOB data
- Plenty of useful tools such as data grouping, fast search and filtering
- Multi-level master-detail view to work with several linked tables at the same time
- Table and card views to see data the way you like
- Ability to copy and paste selected records
- Exporting data to SQL script as INSERT statement

Impressive data export and import capabilities

- Exporting data to most popular formats: MS Excel, MS Word, HTML, PDF, TXT, CSV, DBF, XML, etc.
- Exporting data to MS Access
- Importing data from MS Excel, DBF, TXT and CSV
- Importing data from MS Access

Effective security management

- Grant manager displaying all database object grants in the form of a grid
- Ability to set permissions for table columns
- Easy management of database users, roles and profiles

Excellent visual and text tools for query building

- Visual query builder allows you to build complicated queries without any knowledge of SQL syntax
- Multiple SQL editors with code completion and syntax highlight
- Large script execution (SQL script editor)
- Ability to view query plan as diagram
- SQL Formatter (Available from SQL Editor context menu)

Report designer with clear in use report construction wizard

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- Create Report Wizard allows you to create simple reports in a few clicks
- Managing reports the same way as if they were database objects: accessing reports directly through DB Explorer tree

Powerful visual database designer

- Ability to create, edit and drop tables and table fields, set links between tables visually
- Reverse engineering
- Saving as image or printing database diagram

Latest Oracle version support

- Support of all server versions from 8.1.7 to 10g R2
- Support of all Oracle data types including the new BINARY_FLOAT and BINARY_DOUBLE types
- Powerful and easy management of object permissions, including column-level permissions

New state-of-the-art graphical user interface

- Office 11 and Windows XP visual schemes support
- Well-described Wizard System
- User-friendly database explorer for easy management of all Oracle objects
- Windows Toolbar to switch between windows easily, like in Windows Task Bar
- Navigation bars with hot actions in most of the windows
- Ability to save all program settings
- Customizable toolbars for all program windows
- Fully customizable program interface
- Powerful visual options module
- Localizable program interface

Other useful tools to make your work with Oracle server as easy as it can be

- Extracting metadata into text files or SQL script editor
- Powerful print metadata module to create customizable metadata reports
- Report designer for building powerful reports visually
- SQL Monitor
- HTML report wizard to create a detailed HTML report about your database quickly

...and other useful features

- Keyboard templates
- To-do list
- External tool manager

Product information:

Homepage:	http://www.sqlmanager.net/en/products/oracle/manager
Support Ticket System:	http://www.sqlmanager.net/support
Register on-line at:	http://www.sqlmanager.net/en/products/oracle/manager/buy

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1.1 What's new

Version	Release date
SQL Manager 2007 for Oracle 1.5.0.1	November 19, 2007

What's new in SQL Manager 2007 for Oracle?

- Implemented PL/SQL Code Debugger in SQL Editor
- Added an ability to log the values of bind-variables in SQL Monitor
- Added Tips of the Day
- Statements of type *MERGE INTO... USING ...* were parsed incorrectly. Fixed now
- An Access Violation error occurred on attempt to Recompile invalid objects. Fixed now
- The application used to freeze upon adding an object to Visual Database Designer when a large number of objects were opened. Fixed now
- Other minor improvements and bug-fixes
- Added Polish localization
- Updated English localization

See also:

Version history

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1.2 System requirements

System requirements for SQL Manager 2007 for Oracle

- 300-megahertz (MHz) Intel® Pentium II-compatible or faster processor; 600-megahertz (MHz) or faster processor recommended
- Microsoft® Windows NT4 with SP4 or later, Microsoft® Windows 2000, Microsoft® Windows 2000 Server, Microsoft® Windows XP, Microsoft® Windows 2003 Server, Microsoft® Windows Vista
- 64 MB RAM or more; 128 MB or more recommended
- 50MB of available HD space for program installation
- Super VGA (800x600) or higher-resolution video adapter and monitor; Super VGA (1024x768) or higher-resolution video adapter and monitor recommended
- Microsoft® Mouse or compatible pointing device
- Oracle® Client 8.1.7 or higher
- Possibility to connect to any local or remote Oracle server

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1.3 Feature Matrix

The **FREE** *Lite version* of **SQL Manager 2007 for Oracle** does not include all features of the *Full version* and has some limitations concerning the number of the databases that can be registered and a number of data manipulation and server maintenance tools. The detailed feature matrix is given below.

Note that when using the **FREE** *Lite version* of **SQL Manager 2007 for Oracle** you can activate a 30-day period of fully-functional usage. After the period expires, you will be able to continue using the Lite version.

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1.4 Installation

If you are **installing SQL Manager 2007 for Oracle for the first time** on your PC:

- download the SQL Manager 2007 for Oracle distribution package from the download page available at our site;
- unzip the downloaded file to any local directory, e.g. *C:\unzipped*;
- run *OraManagerPro.exe* from the local directory and follow the instructions of the installation wizard;
- after the installation process is completed, find the SQL Manager shortcut in the corresponding group of Windows Start menu.

If you want to **upgrade an installed copy of SQL Manager 2007 for Oracle** to the latest version:

- download the executable file of SQL Manager 2007 for Oracle from the download page available at our site;
- unzip the downloaded file to any local directory, e.g. *C:\unzipped*;
- close SQL Manager application if it is running;
- replace the previous version of SQL Manager by copying the unzipped executable file to the *C:\...\%program_directory%* location;
- run SQL Manager 2007 for Oracle using its shortcut in the corresponding group of Windows Start menu.

Also you can use the full distribution package to upgrade your current version of SQL Manager 2007 for Oracle. In this case, you should repeat the steps you have made for the first-time installation. Note that the full distribution package is larger than a single executable file.

See also:

SQL Manager FAQ

License agreement

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1.5 Registration

To make it easier for you to purchase our products, we have contracted with share-it! registration service. The share-it! order process is protected via a secure connection and makes on-line ordering by credit/debit card quick and safe. The following information about share-it! is provided for your convenience.

Share-it! is a global e-commerce provider for software and shareware sales via the Internet. Share-it! accepts payments in US Dollars, Euros, Pounds Sterling, Japanese Yen, Australian Dollars, Canadian Dollars or Swiss Franks by Credit Card (Visa, MasterCard/EuroCard, American Express, Diners Club), Bank/Wire Transfer, Check or Cash.

If you have ordered EMS software online and would like to review your order information, or if you have questions about ordering, payments, or shipping procedures, please visit our Customer Care Center, provided by share-it!

Please note that all of our products are delivered via ESD (Electronic Software Delivery) only. After purchase you will be able to immediately download the registration keys or passwords and download links for archives of full versions. Also you will receive a copy of registration keys or passwords by e-mail. Please make sure to enter a valid e-mail address in your order. If you have not received the keys within 2 hours, please, contact us at sales@sqlmanager.net.

Product distribution	Price	
SQL Manager 2007 for Oracle (Business license) + 1-Year Maintenance*	**$275**	Register Now!
SQL Manager 2007 for Oracle (Business license) + 2-Year Maintenance*	**$344**	
SQL Manager 2007 for Oracle (Business license) + 3-Year Maintenance*	**$385**	
SQL Manager 2007 for Oracle (Non-commercial license) + 1-Year Maintenance*	**$135**	
SQL Manager 2007 for Oracle (Non-commercial license) + 2-Year Maintenance*	**$169**	
SQL Manager 2007 for Oracle (Non-commercial license) + 3-Year Maintenance*	**$189**	
SQL Manager 2007 for Oracle (Trial version)	**Free!**	Download Now!
SQL Manager 2007 for Oracle Lite	**Free!**	Download Now!

*__EMS Maintenance Program__ provides the following benefits:

- Free software bug fixes, enhancements, updates and upgrades during the maintenance period
- Free unlimited communications with technical staff for the purpose of reporting Software failures
- Free reasonable number of communications for the purpose of consultation on operational aspects of the software

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After your maintenance expires you will not be able to update your software or get technical support. To protect your investments and have your software up-to-date, you need to renew your maintenance.

You can easily reinitiate/renew your maintenance with our on-line, speed-through Maintenance Reinstatement/Renewal Interface. After reinitiating/renewal you will receive a confirmation e-mail with all the necessary information.

See also:

How to register SQL Manager

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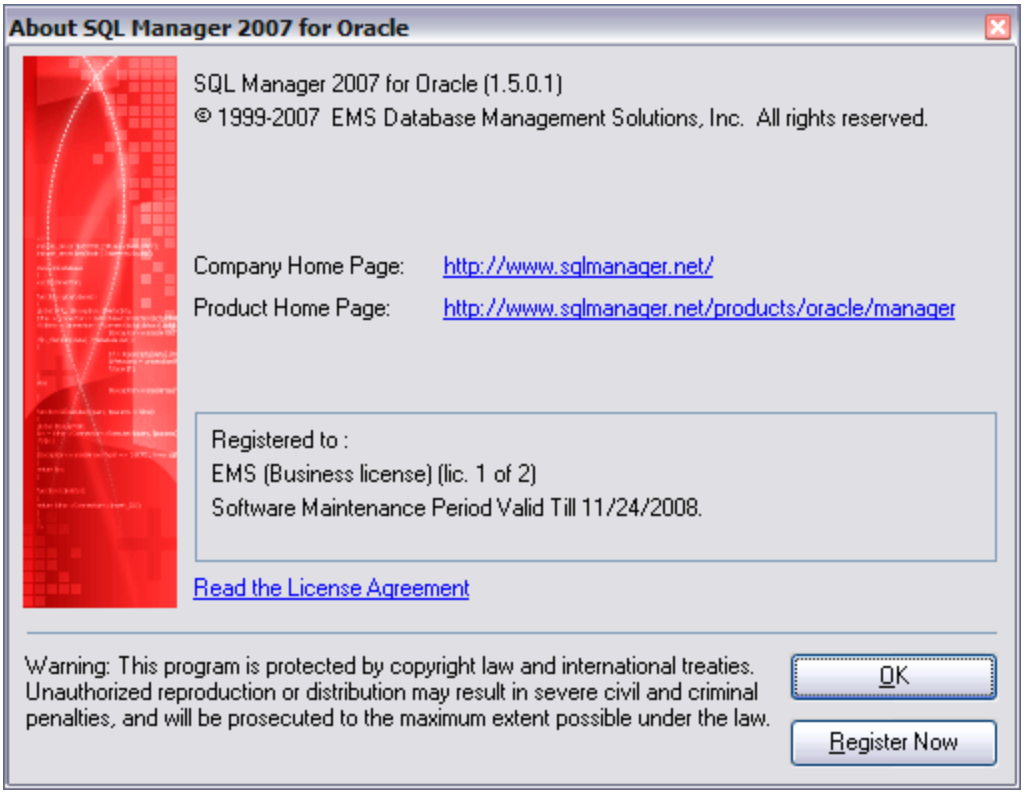
1.6 How to register SQL Manager

If you have not registered your copy of SQL Manager 2007 for Oracle yet, you can do it by pressing the **Register Now** button and entering your registration information in the **Register SQL Manager 2007 for Oracle** dialog.


About SQL Manager 2007 for Oracle
SQL Manager 2007 for Oracle (1.5.0.1)
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Company Home Page: http://www.sqlmanager.net/
Product Home Page: http://www.sqlmanager.net/products/oracle/manager
Registered to :
EMS (Business license) (lic. 1 of 2)
Software Maintenance Period Valid Till 11/24/2008.
Read the License Agreement
Warning: This program is protected by copyright law and international treaties. Unauthorized reproduction or distribution may result in severe civil and criminal penalties, and will be prosecuted to the maximum extent possible under the law.
OK
Register Now

To register your newly purchased copy of EMS SQL Manager 2007 for Oracle, perform the following steps:

- receive the notification letter from **Share-it!** with the registration info;
- enter the **Registration Name** and the **Registration Key** from this letter;
- make sure that the registration process has been completed successfully – check the registration information in the **About SQL Manager 2007 for Oracle** dialog (use the **Help | About** menu item to open this dialog).

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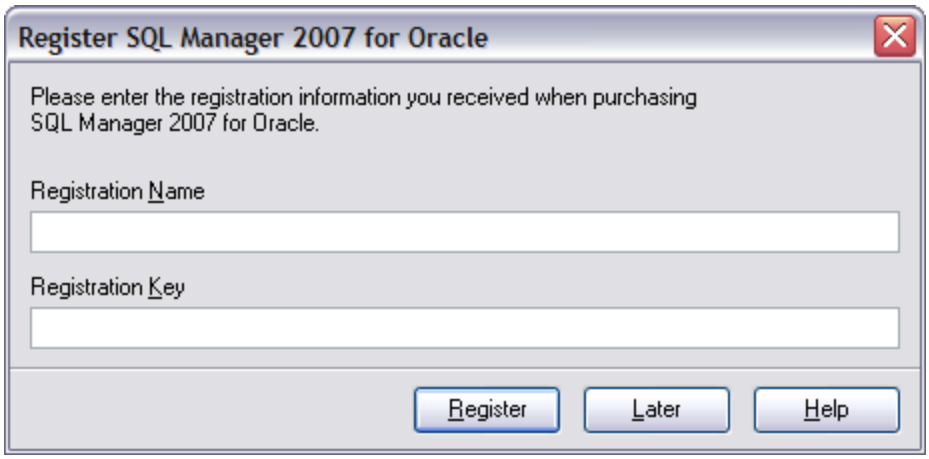

See also:

Registration

License Agreement

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1.8 Version history

Product name	Version	Release date
SQL Manager 2007 for Oracle	**Version 1.4.0.1**	August 17, 2007
SQL Manager 2005 for Oracle	**Version 1.3.0.1**	June 5, 2007
SQL Manager 2005 for Oracle	**Version 1.2.0.1**	March 27, 2007
SQL Manager 2005 for Oracle	**Version 1.1.0.1**	January 24, 2007
SQL Manager 2005 for Oracle	**Version 1.0.0.1**	December 5, 2006

Full version history is available at
http://www.sqlmanager.net/products/oracle/manager/news

Version 1.4.0.1

- Backup/Restore Database feature is implemented; the User managed and RMAN user strategies are available
- Recompile Invalid Objects is also available for users who have no SELECT_CATALOG_ROLE privilege
- The Dependency Tree building speed significantly increased
- It was impossible to obtain data via a WITH-prefixed query. Fixed now
- Extract to SQL script. When extracting the CLOB field data as string the ' symbol was not processed correctly. Fixed now
- Key Mapping. The Quick Code settings used to be displayed incorrectly. Fixed now
- The Ctrl+Alt+Q key combination used to invoke procedure list in default scheme, which made it impossible to enter the @ symbol in the German layout. Fixed now
- A wrong script used to be generated when setting the 'Not Null' option in Table Editor. Fixed now
- When obtaining a sequence definition the current sequence value was not taken into account. Fixed now
- Database Registration Info. The Reconnection prompt used to popup even if no changes were made. Fixed now
- Other minor improvements and bug-fixes

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Version 1.3.0.1

- Oracle Client Checker is added to check client and home settings on starting the program. It can also be called from Database Registration Info dialog
- Advanced Statistics Wizard is added to collect, delete and import/export the statistics on specified objects for optimizer
- Truncate Wizard is added for truncating table and cluster data
- Enable/Disable Constraints Wizard is added to disable and enable the constraints of different types (for selected tables)
- Procedures and functions are shown as subobjects for the packages in DB Explorer, as well as in the Code Completion list
- The Recompile Invalid Objects service is added, which allows to recompile selected invalid PL/SQL objects
- Code Completion. Now the objects are displayed in Code Completion list even if they were not refreshed in the object tree list of DB Explorer (can be switched off with the help of corresponding option)

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- Extract Database. Wrong statements for creating materialized views used to be displayed in target script. Fixed now
- When duplicating a table the schema name of the target table was missing in field descriptions, which caused an error on executing the script. Fixed now
- Visual Database Designer. When opening a previously saved diagram the 'Object not found in database' error used to occur. Fixed now
- Visual Database Designer. In some rare cases foreign keys were not displayed. Fixed now
- Database Registration Info. The value of the Rollback on Disconnect option was not taken into account in case of emergency disconnect. Fixed now
- When deleting multiple materialized view logs in object tree a wrong script used to be generated. Fixed now
- Fixed the AV error which used to occur on creating a view
- Dependency Tree. It was impossible to open the editor from a diagram for indices and triggers. Fixed now
- SQL Script. In some rare cases the script parser detected object type wrong for materialized views, object types, array types; those objects were placed into the wrong branch in DB Explorer. Fixed now
- DB Explorer. After disconnecting from a database the Recent Objects list remained active. Fixed now
- Other small improvements and bug-fixes

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Version 1.2.0.1

- Database Statistics form is added. It displays summary on instance performance, date of last gathering the statistics on tables and indices. It also outputs the information on I/O sessions performance, CPU-time, UGA-memory, Hit-Ratios, Locks; the information on Tablespaces, Segments, SGA, Control Files, Data Files, Rollback Segments. Free space estimation is displayed graphically. Detailed information on wait events and latches is also available
- Database Information form is added. Contains common information on current database instance and NLS parameters. Allows viewing and editing its configuration parameters
- Object Tables support implemented
- The ability to start gathering information for separate table or schema is added
- The method of access level test to data dictionary (hierarchical privileges by roles, by system privileges) is fixed and expanded
- Print Metadata. A report on the table now includes field descriptions
- Visual Database Designer. The method of refreshing during reverse engineering is optimized. Performing reverse engineering now it is possible to refresh selected schemas only
- Create and editing database reports is now available for limited access users
- DB Explorer. The ability to rename database groups added
- SQL Editor. The SELECT queries containing the DISTINCT keyword used to work incorrectly. Fixed now
- Reports could not be renamed. Fixed now
- When extracting a database by a user with the limited access to the data dictionary the error used to occur. Fixed now
- When opening invalid objects within the 'floating windows' environment the 'Cant focus a disabled or invisible window' error used to occur. Fixed now
- Local Naming Parameters Editor. There are some errors in editor work fixed
- The bug with incorrect displaying dependencies for materialized view log is fixed now

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- Other small improvements and bug-fixes

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Version 1.1.0.1

- Full support of External and Index-Organized tables
- Invalid status objects are marked with a cross in DB Explorer tree now. Users are considered invalid if any of EXPIRED, LOCKED, EXPIRED GRACE, EXPIRED TIMED account statuses takes place. \their account status is one of the following: EXPIRED, LOCKED, EXPIRED GRACE, EXPIRED TIMED
- SQL Script: Ability to execute selected statements and statement under cursor added
- SQL Script: DBMS output is displayed now
- SQL Script: Script is not loaded into memory anymore when executing a script from file
- SQL Editor: DBMS output is displayed now
- SQL Editor: When switching between queries the cursor and scrolling bar position were not saved. Fixed now
- XMLType is added to the list of available fields
- Changing Metadata window. If any error occurs the cursor is now moved to a place which caused an error
- When refreshing tablespaces on Oracle 9.2 an error used to occur. Fixed now
- If table or view lists were not refreshed in DB Explorer, the first attempt to execute a query in SQL Editor could take a long time, especially if connection was slow or the server was overloaded. Fixed now
- In some rare cases on opening the Code Completion window and typing symbols the window started to blink. Fixed now
- When closing a report in some cases Access Violation errors used to occur. Fixed now
- The bug with refreshing some objects by a user with no SELECT_CATALOG_ROLE privilege is fixed now. (Some objects could be refreshed by a user with no SELECT_CATALOG_ROLE privilege. Fixed now.)
- Visual Database Designer. When deleting foreign keys the confirmation dialog did not appear. Fixed now
- Database Registration. Databases of default home were always displayed at the database list, disregarding which home was selected. Fixed now. (The database list always displayed databases from default home directory, irrespective of the selected home. Fixed now.)
- When creating a tablespace on Oracle 8 or Oracle 9 the Minimum Extent Size parameter was ignored in some cases. Fixed now
- Other small improvements and bug-fixes

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Version 1.0.0.1

Basic features:

- Rapid database management and navigation
- Easy management of all Oracle objects (including create/edit/drop operations)
- Advanced data management and manipulation tools
- Impressive data export and import capabilities
- Effective security management
- Excellent visual and text tools for query building
- Report designer with clear in use report construction wizard
- Powerful visual database designer
- Latest Oracle version support

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- New state-of-the-art graphical user interface

and more...

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See also:

What's new

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1.9 EMS SQL Manager FAQ

Please read this page attentively if you have questions about **EMS SQL Manager 2007 for Oracle**.

Table of contents

Product questions
- What is EMS SQL Manager for Oracle?
- What is the difference between Full/Lite editions of EMS SQL Manager for Oracle?
- What do I need to start working with EMS SQL Manager for Oracle?
- What is the difference between the Export/Import functions in SQL Manager and the Data Export/Import utilities?
- What is the difference between the Query Builder module in SQL Manager and the SQL Query for Oracle utility?
- What is the difference between the Extract Database function in SQL Manager for Oracle and the DB Extract for Oracle standalone utility?

Common questions
- I can't modify DDL. Why?
- How can I customize data formats in grid?
- I need to perform some changes in database objects of my test database and then make the same changes on another database. Are there any tools for this purpose in SQL Manager for Oracle?
- When I create database objects, their names are always converted to upper case. How I can prevent it?

Export/Import questions
- I tried to export data from a table, but found that I can export only the first 1000 records. Can I export all the records from a table if it contains more than 1000 records?
- What is the difference between the "Extract Database" and "Export as SQL Script" functions?
- How can I change the default directory where exported data are saved?

Question/answer list

Product questions

Q: What is EMS SQL Manager for Oracle?
A: EMS SQL Manager 2007 for Oracle is a powerful tool for Microsoft® SQL Server™ administration and development. SQL Manager 2007 for Oracle works with all Oracle versions from 7 to 2005 and supports all of the latest features including Assemblies, DDL Triggers, Synonyms, Typed XML columns, and so on. It offers plenty of powerful tools for experienced users to satisfy all their needs. SQL Manager 2007 for Oracle has a new state-of-the-art graphical user interface with well-described wizard system, so clear in use that even a newbie will not be confused with it.

Q: What is the difference between Full/Lite editions of EMS SQL Manager for Oracle?
A: These editions of SQL Manager for Oracle differ in price and features. To register SQL Manager for Oracle, see the Purchase page, and to learn about the difference in

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features please go to our Feature Matrix page.

Q: What do I need to start working with EMS SQL Manager for Oracle?
A: First of all, you must have a possibility to connect to some instance of Oracle server to work with SQL Manager. You can download Oracle from http://www.oracle.com/technology/software. Besides, you need your workstation to satisfy the system requirements of SQL Manager 2007 for Oracle.

Q: What is the difference between the Export/Import functions in SQL Manager and the Data Export/Import utilities?
A: The Data Export/Import for Oracle utilities include some additional features which are not available in SQL Manager, such as:
- export/import data from/to several tables simultaneously;
- export/import data from/to tables selected from different databases on one host;
- a command-line utility to export/import data using the configuration file with all the export/import options.

Q: What is the difference between the Query Builder module in SQL Manager and the SQL Query for Oracle utility?
A: First of all, SQL Query for Oracle works faster as it is a much lighter product. Besides, it provides additional features for query building, e.g.:
- keeping query history which allows you to rollback to any edited query;
- various interface improvements for more productive and easier work.

Q: What is the difference between the Extract Database function in SQL Manager for Oracle and the DB Extract for Oracle standalone utility?
A: The DB Extract for Oracle utility includes some additional features which are not available in SQL Manager, such as:
- extracting metadata and/or data from several databases on one host;
- a console application for performing extract in one-touch;
- faster extraction speed.

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Common questions

Q: I can't modify DDL. Why?
A: The DDL tabs of the SQL Manager editors are read-only. To modify an object, you can copy the text to the clipboard and modify it using SQL Editor.

Q: How can I customize data formats in grid?
A: You can customize all display formats: integer, float, date, time and datetime using the Color & Formats page of the Environment Options dialog.

Q: I need to perform some changes in database objects of my test database and then make the same changes on another database. Are there any tools for this purpose in SQL Manager for Oracle?
A: The Database Registration Info dialog provides the Logs section where you can enable logging metadata changes performed over the database and/or SQL queries executed in SQL Editor.

Q: When I create database objects, their names are always converted to upper case. How I can prevent it?

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A: Please try to switch off the "Convert created objects' names to upper case" option within the Object Editors section of the Environment Options dialog.

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Export/Import questions

Q: I tried to export data from a table, but I found that I could export only the first 1000 records. Can I export all the records from a table if it contains more than 1000 records?

A: The Export Data function exports only those records which are currently selected in the Grid View. The selection is limited to 1000 by default, so you should increase this value to select all the records to be able to export them all. Also you can set the default limit value using the Grid page of the Environment Options dialog.

Q: What is the difference between the "Extract Database" and "Export as SQL Script" functions?

A: Export as SQL Script is intended for exporting table data that will be inserted into a database system other than Oracle. Use Extract Database Wizard to copy metadata and/or data to a database on Oracle afterwards.

Q: How can I change the default directory where exported data are saved?

A: Follow the steps below to change the default directory:

1. Right-click the database alias in DB Explorer and select the 'Database Registration Info...' context menu item (you can also find this item in the 'Database' main menu) to open the Database Registration Info dialog.
2. Proceed to the Directories section within the dialog.
3. Set the 'Default directory for Export Data'.

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If you still have any questions, contact us at our Support Center.

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1.10 Other EMS Products

Quick navigation

MySQL

Microsoft SQL

PostgreSQL

InterBase / FireBird

Oracle

IBM DB2

DBISAM

Tools & components

MySQL

SQL Management Studio for MySQL
EMS SQL Management Studio for MySQL is a complete solution for database administration and development. SQL Studio unites the must-have tools in one powerful and easy-to-use environment that will make you more productive than ever before!

SQL Manager for MySQL
Simplify and automate your database development process, design, explore and maintain existing databases, build compound SQL query statements, manage database user rights and manipulate data in different ways.

Data Export for MySQL
Export your data to any of 15 most popular data formats, including MS Access, MS Excel, MS Word, PDF, HTML and more.

Data Import for MySQL
Import your data from MS Access, MS Excel and other popular formats to database tables via user-friendly wizard interface.

Data Pump for MySQL
Migrate from most popular databases (MySQL, PostgreSQL, Oracle, DB2, InterBase/Firebird, etc.) to MySQL.

Data Generator for MySQL
Generate test data for database testing purposes in a simple and direct way. Wide range of data generation parameters.

DB Comparer for MySQL
Compare and synchronize the structure of your databases. Move changes on your development database to production with ease.

DB Extract for MySQL
Create database backups in the form of SQL scripts, save your database structure and table data as a whole or partially.

SQL Query for MySQL
Analyze and retrieve your data, build your queries visually, work with query plans, build charts based on retrieved data quickly and more.

Data Comparer for MySQL
Compare and synchronize the contents of your databases. Automate your data migrations from development to production database.

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Microsoft SQL

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SQL Management Studio for SQL Server
EMS SQL Management Studio for SQL Server is a complete solution for database administration and development. SQL Studio unites the must-have tools in one powerful and easy-to-use environment that will make you more productive than ever before!

SQL Manager for SQL Server
Simplify and automate your database development process, design, explore and maintain existing databases, build compound SQL query statements, manage database user rights and manipulate data in different ways.

Data Export for SQL Server
Export your data to any of 15 most popular data formats, including MS Access, MS Excel, MS Word, PDF, HTML and more

Data Import for SQL Server
Import your data from MS Access, MS Excel and other popular formats to database tables via user-friendly wizard interface.

Data Pump for SQL Server
Migrate from most popular databases (MySQL, PostgreSQL, Oracle, DB2, InterBase/Firebird, etc.) to Microsoft® SQL Server™.

Data Generator for SQL Server
Generate test data for database testing purposes in a simple and direct way. Wide range of data generation parameters.

DB Comparer for SQL Server
Compare and synchronize the structure of your databases. Move changes on your development database to production with ease.

DB Extract for SQL Server
Create database backups in the form of SQL scripts, save your database structure and table data as a whole or partially.

SQL Query for SQL Server
Analyze and retrieve your data, build your queries visually, work with query plans, build charts based on retrieved data quickly and more.

Data Comparer for SQL Server
Compare and synchronize the contents of your databases. Automate your data migrations from development to production database.

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PostgreSQL

SQL Management Studio for PostgreSQL
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SQL Manager for PostgreSQL
Simplify and automate your database development process, design, explore and maintain existing databases, build compound SQL query statements, manage database user rights and manipulate data in different ways.

Data Export for PostgreSQL
Export your data to any of 15 most popular data formats, including MS Access, MS Excel, MS Word, PDF, HTML and more

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Data Import for PostgreSQL
Import your data from MS Access, MS Excel and other popular formats to database tables via user-friendly wizard interface.

Data Pump for PostgreSQL
Migrate from most popular databases (MySQL, SQL Server, Oracle, DB2, InterBase/Firebird, etc.) to PostgreSQL.

Data Generator for PostgreSQL
Generate test data for database testing purposes in a simple and direct way. Wide range of data generation parameters.

DB Comparer for PostgreSQL
Compare and synchronize the structure of your databases. Move changes on your development database to production with ease.

DB Extract for PostgreSQL
Create database backups in the form of SQL scripts, save your database structure and table data as a whole or partially.

SQL Query for PostgreSQL
Analyze and retrieve your data, build your queries visually, work with query plans, build charts based on retrieved data quickly and more.

Data Comparer for PostgreSQL
Compare and synchronize the contents of your databases. Automate your data migrations from development to production database.

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InterBase / Firebird

SQL Management Studio for InterBase/Firebird
EMS SQL Management Studio for InterBase and Firebird is a complete solution for database administration and development. SQL Studio unites the must-have tools in one powerful and easy-to-use environment that will make you more productive than ever before!

SQL Manager for InterBase/Firebird
Simplify and automate your database development process, design, explore and maintain existing databases, build compound SQL query statements, manage database user rights and manipulate data in different ways.

Data Export for InterBase/Firebird
Export your data to any of 15 most popular data formats, including MS Access, MS Excel, MS Word, PDF, HTML and more

Data Import for InterBase/Firebird
Import your data from MS Access, MS Excel and other popular formats to database tables via user-friendly wizard interface.

Data Pump for InterBase/Firebird
Migrate from most popular databases (MySQL, SQL Server, Oracle, DB2, PostgreSQL, etc.) to InterBase/Firebird.

Data Generator for InterBase/Firebird
Generate test data for database testing purposes in a simple and direct way. Wide range of data generation parameters.

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DB Comparer for InterBase/Firebird
Compare and synchronize the structure of your databases. Move changes on your development database to production with ease.

DB Extract for InterBase/Firebird
Create database backups in the form of SQL scripts, save your database structure and table data as a whole or partially.

SQL Query for InterBase/Firebird
Analyze and retrieve your data, build your queries visually, work with query plans, build charts based on retrieved data quickly and more.

Data Comparer for InterBase/Firebird
Compare and synchronize the contents of your databases. Automate your data migrations from development to production database.

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Oracle

SQL Management Studio for Oracle
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SQL Manager for Oracle
Simplify and automate your database development process, design, explore and maintain existing databases, build compound SQL query statements, manage database user rights and manipulate data in different ways.

Data Export for Oracle
Export your data to any of 15 most popular data formats, including MS Access, MS Excel, MS Word, PDF, HTML and more.

Data Import for Oracle
Import your data from MS Access, MS Excel and other popular formats to database tables via user-friendly wizard interface.

Data Pump for Oracle
Migrate from most popular databases (MySQL, PostgreSQL, MySQL, DB2, InterBase/Firebird, etc.) to Oracle

Data Generator for Oracle
Generate test data for database testing purposes in a simple and direct way. Wide range of data generation parameters.

DB Comparer for Oracle
Compare and synchronize the structure of your databases. Move changes on your development database to production with ease.

DB Extract for Oracle
Create database backups in the form of SQL scripts, save your database structure and table data as a whole or partially.

SQL Query for Oracle
Analyze and retrieve your data, build your queries visually, work with query plans, build charts based on retrieved data quickly and more.

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Data Comparer for Oracle
Compare and synchronize the contents of your databases. Automate your data migrations from development to production database.

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DB2

SQL Management Studio for DB2
EMS SQL Management Studio for DB2 is a complete solution for database administration and development. SQL Studio unites the must-have tools in one powerful and easy-to-use environment that will make you more productive than ever before!

SQL Manager for DB2
Simplify and automate your database development process, design, explore and maintain existing databases, build compound SQL query statements, manage database user rights and manipulate data in different ways.

Data Export for DB2
Export your data to any of 15 most popular data formats, including MS Access, MS Excel, MS Word, PDF, HTML and more.

Data Import for DB2
Import your data from MS Access, MS Excel and other popular formats to database tables via user-friendly wizard interface.

Data Pump for DB2
Migrate from most popular databases (MySQL, PostgreSQL, Oracle, MySQL, InterBase/Firebird, etc.) to DB2

Data Generator for DB2
Generate test data for database testing purposes in a simple and direct way. Wide range of data generation parameters.

DB Comparer for DB2
Compare and synchronize the structure of your databases. Move changes on your development database to production with ease.

DB Extract for DB2
Create database backups in the form of SQL scripts, save your database structure and table data as a whole or partially.

SQL Query for DB2
Analyze and retrieve your data, build your queries visually, work with query plans, build charts based on retrieved data quickly and more.

Data Comparer for DB2
Compare and synchronize the contents of your databases. Automate your data migrations from development to production database.

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DBISAM

SQL Manager for DBISAM
Simplify and automate your database development process, design, explore and maintain existing databases, build compound SQL query statements, manage database user rights and manipulate data in different ways.

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Tools & components

Advanced Data Export
Advanced Data Export Component Suite (for Borland Delphi and .NET) will allow you to save your data in the most popular office programs formats.

Advanced Data Import
Advanced Data Import™ Component Suite for Delphi® and C++ Builder® will allow you to import your data to the database from files in the most popular data formats.

Advanced PDF Generator
Advanced PDF Generator for Delphi gives you an opportunity to create PDF documents with your applications written on Delphi® or C++ Builder®.

Advanced Query Builder
Advanced Query Builder is a powerful component suite for Borland® Delphi® and C++ Builder® intended for visual building SQL statements for the SELECT, INSERT, UPDATE and DELETE clauses.

Advanced Excel Report
Advanced Excel Report for Delphi is a powerful band-oriented generator of template-based reports in MS Excel.

Advanced Localizer
Advanced Localizer™ is an indispensable component suite for Delphi® for adding multilingual support to your applications.

Source Rescuer
EMS Source Rescuer™ is an easy-to-use wizard application for Borland Delphi® and C++Builder® which can help you to restore your lost source code.

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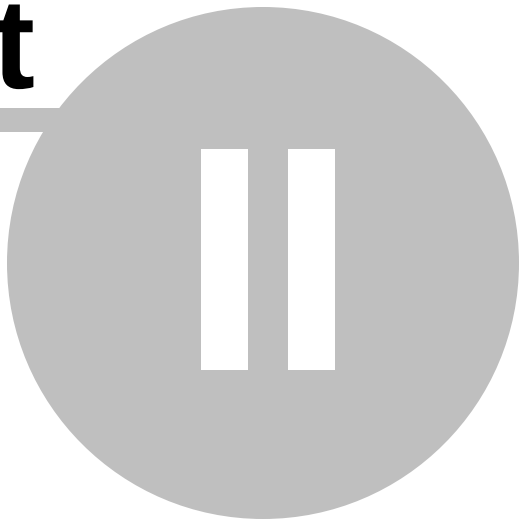
Part

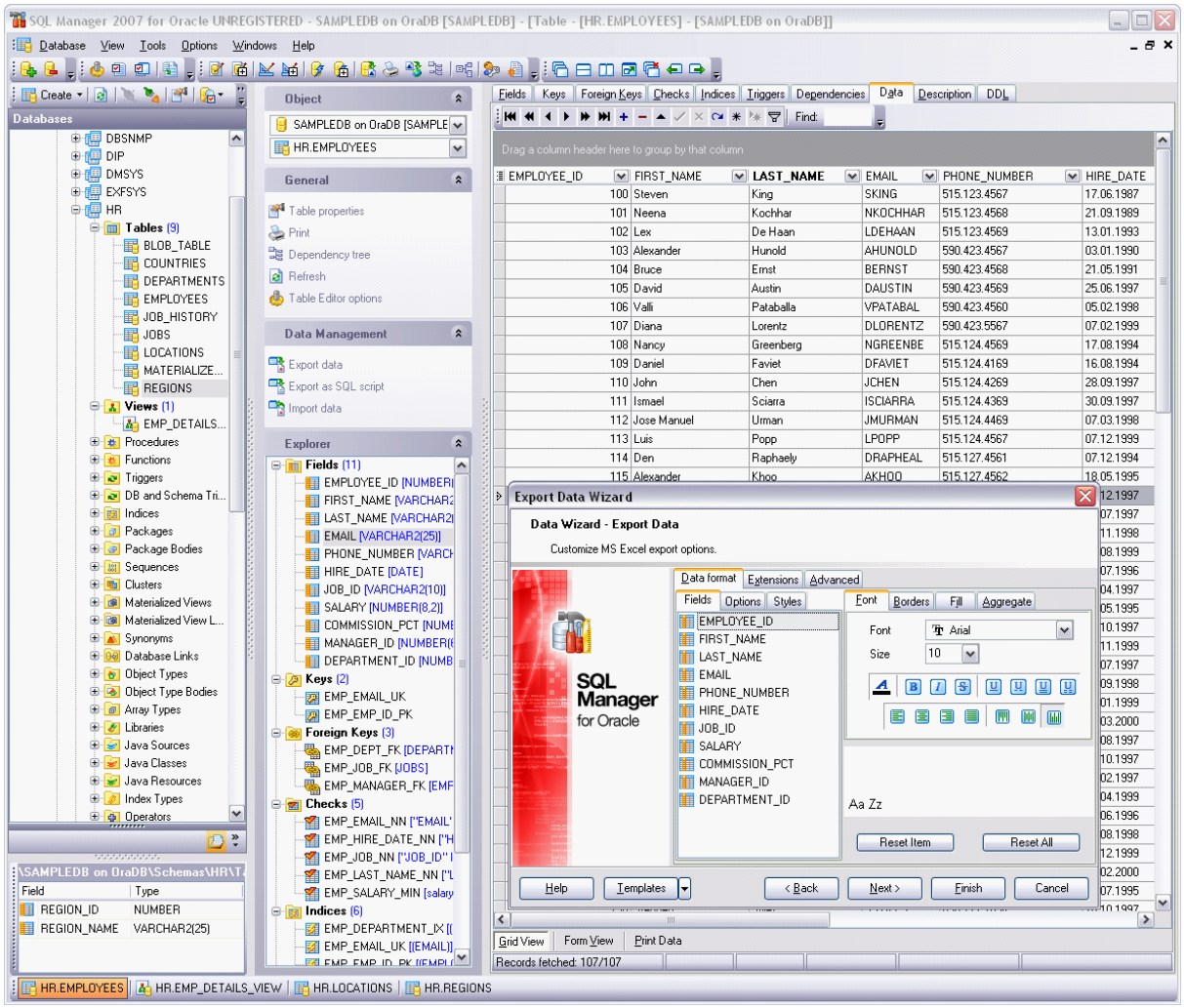


2 Getting Started

To start working with Oracle databases in SQL Manager 2007 for Oracle you should first register a database or several databases using the Register Database Wizard. After that you can connect to database, manage its objects, table data, and so on. See the instructions below to learn how to perform these operations in the easiest way.

- How the product looks when you start it for the first time
- Working with databases
- Working with database objects
- Using database popup menu
- Using object popup menu
- Switching between child windows

Enjoy your work with SQL Manager 2007 for Oracle!


SQL Manager 2007 for Oracle UNREGISTERED - SAMPLEDB on OraDB [SAMPLEDB] - [Table - [HR.EMPLOYEES] - [SAMPLEDB on OraDB]]
Export Data Wizard
Data Wizard - Export Data
Customize MS Excel export options.
SQL Manager for Oracle

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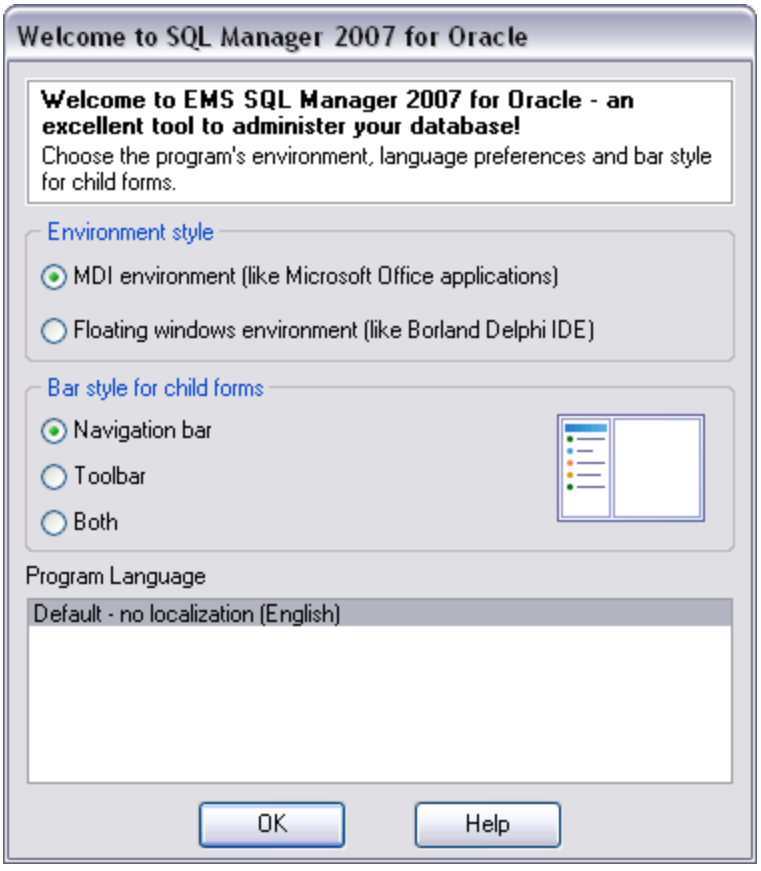
2.1 Selecting style and language

When you start SQL Manager 2007 for Oracle for the first time, you have to choose environment style and program language. You can always change these settings later by selecting **Options | Environment Options** main menu item to change environment style and **Options | Select Program Language** main menu item to change program language.

Environment style
This switch allows you to define the basic window behavior style - MDI (like MS Office) or Floating Windows (like Borland IDE).

Bar style for child forms
Allows you to define the location of action buttons. They can be located at the **Navigation bar** on the left and/or on the **Toolbar**.

Program Language
Select the interface language from the list of available languages.


Welcome to SQL Manager 2007 for Oracle
Welcome to EMS SQL Manager 2007 for Oracle - an excellent tool to administer your database!
Choose the program's environment, language preferences and bar style for child forms.
Environment style
MDI environment (like Microsoft Office applications)
Floating windows environment (like Borland Delphi IDE)
Bar style for child forms
Navigation bar
Toolbar
Both
Program Language
Default - no localization (English)
OK
Help

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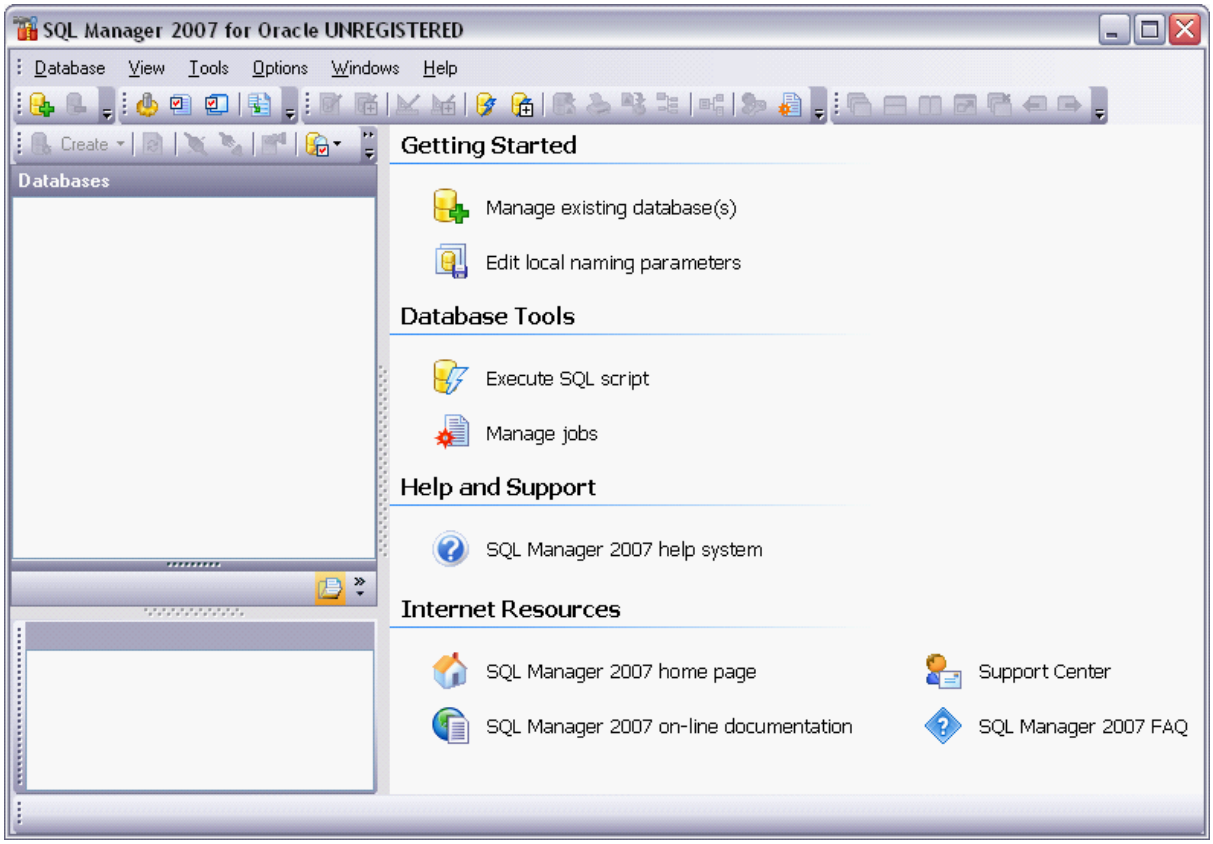
2.2 First time started

This is how SQL Manager 2007 for Oracle looks when you start it for the first time. Click **Manage existing database(s)** to register existing databases in the Register Database Wizard or **Edit local naming parameters** to call the TNS File Constructor.

The Desktop Panel also allows you to open database tools, which do not require database registration, i.e. SQL Script Editor and Manage Jobs, as well as refer to the SQL Manager 2007 for Oracle or Oracle help systems and link to some useful internet resources.



2.2.1 Using Desktop Panel

The Desktop Panel shown when no child windows are open allows you to:

- Register already existing databases in order to manage them with SQL Manager 2007 for Oracle.
- Edit local naming parameters to call the TNS File Constructor.
- Create new table within the current database using New Table window.
- Create new database object within the current database.
- Execute SQL Script in SQL Script Editor.
- Manage Oracle jobs in Jobs Manager.
- Execute a query.
- Grant permissions on database objects to users in Grant Manager.
- Show this help file.
- Browse SQL Manager 2007 for Oracle home page.

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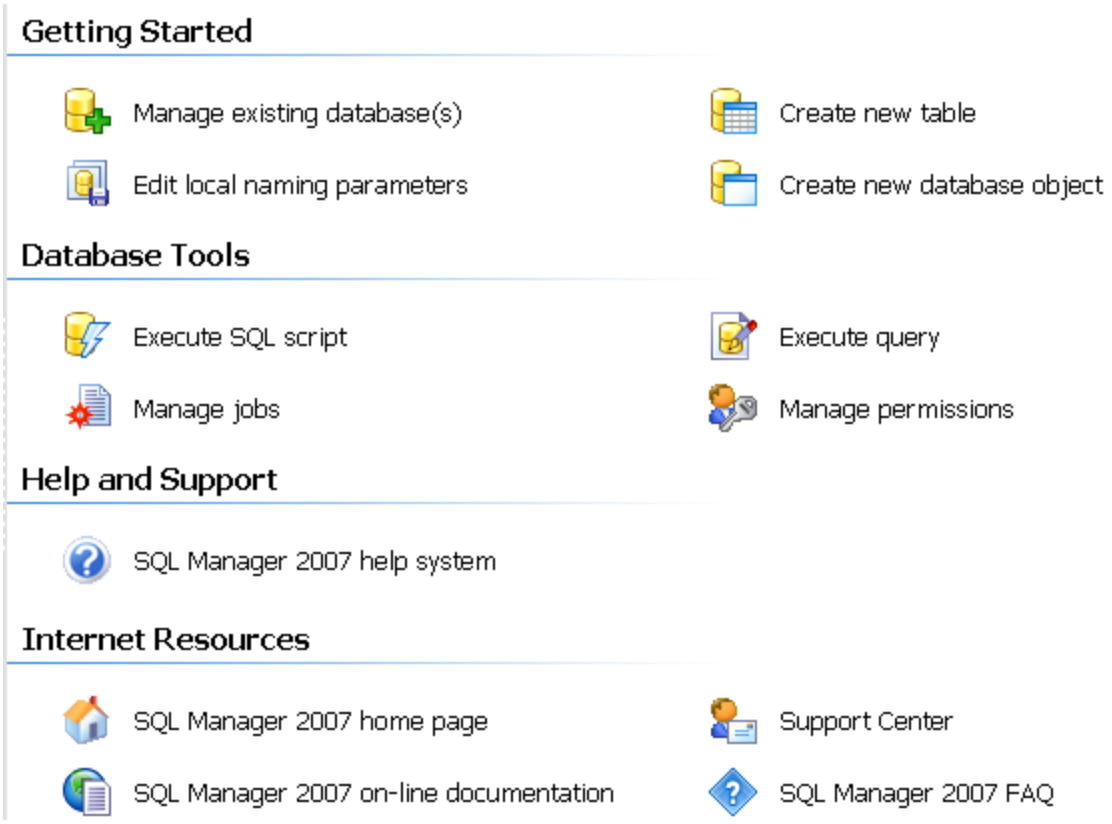
- See SQL Manager 2007 for Oracle on-line documentation.
- Go to Technical Support Center.
- See SQL Manager 2007 for Oracle Frequently Asked Questions.



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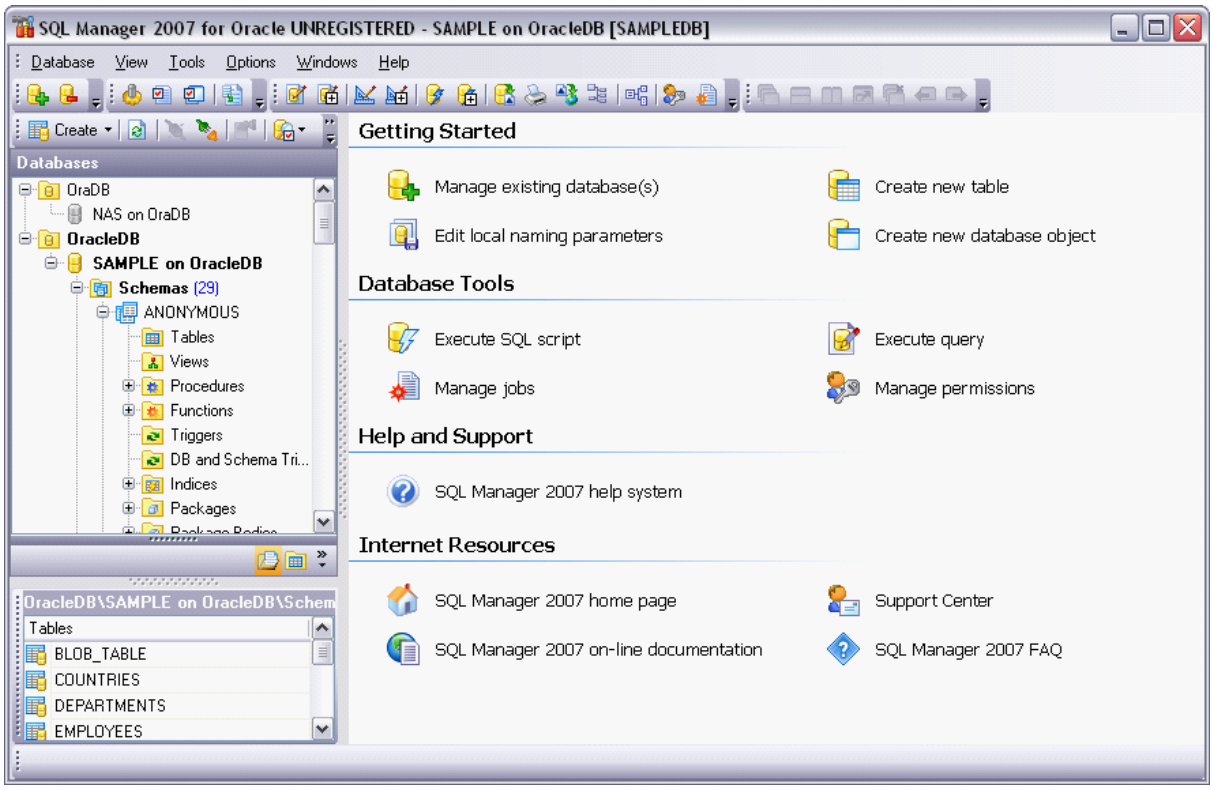
2.3 Working with databases

After you have registered the required databases they appear in the explorer tree on the left. If the **Show Hosts** option is checked at the Environment Options | DB Explorer page, database hosts are also displayed in the tree (**hint:** you can also use **Show Hosts** menu item in the dropdown menu of **View Mode** button on the DB Explorer toolbar for the same purpose.) To connect to a database, simply double-click it in the explorer. If connection succeeds, the database node expands showing the tree of its objects.



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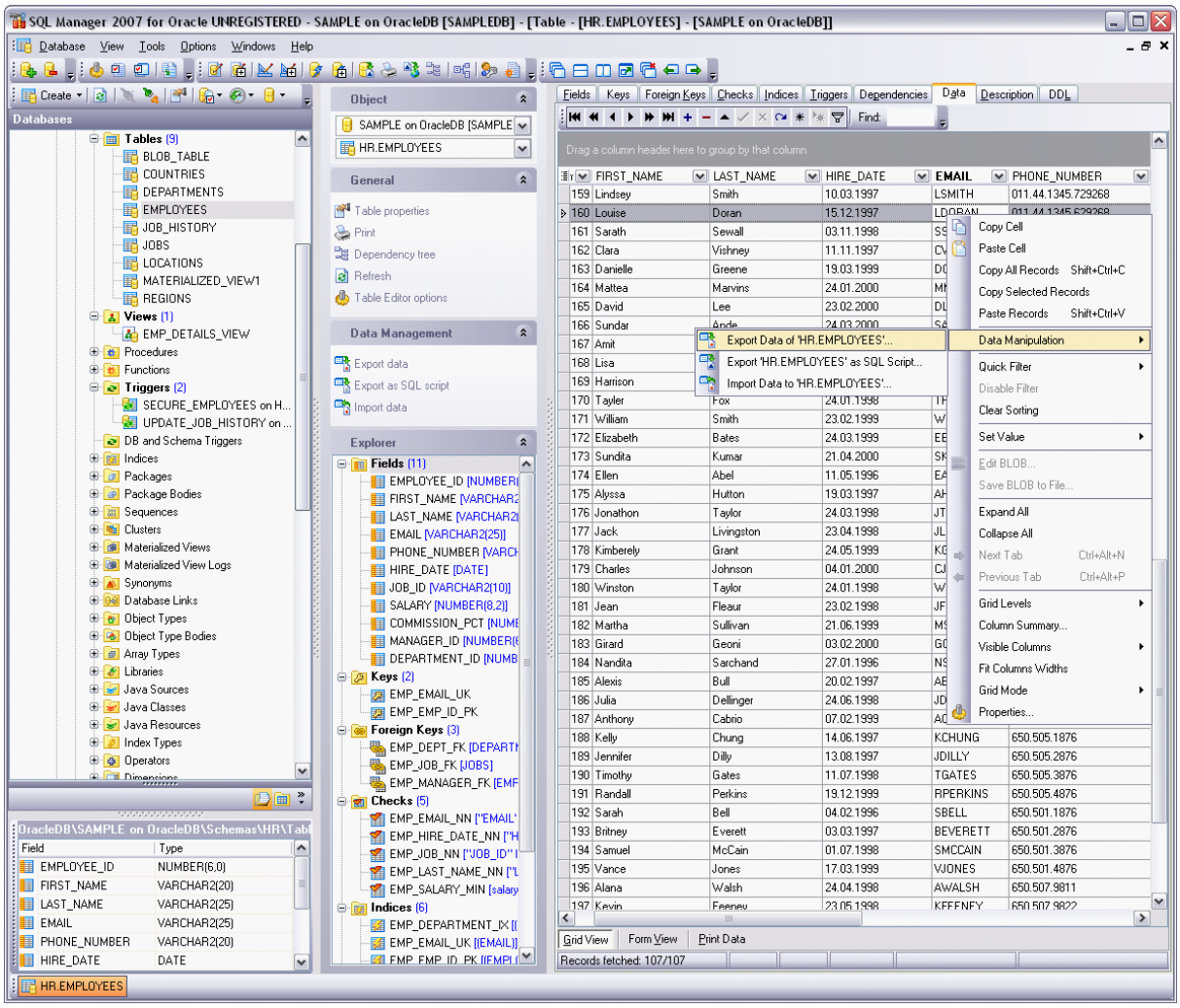
2.4 Working with database objects

The nodes of the DB Explorer tree allow you to access objects of the selected database respectively. If Oracle server you connected to supports certain types of objects, their nodes will appear in the tree. Double-click an object to open it in the appropriate editor. Right-click at the object to display the popup menu, which allows you to perform various operations over the selected object or database.



If you want to use the explorer tree for working with table subobjects: fields, indexes, and foreign keys, check the Show Table Subobjects option at the Environment Options | DB Explorer page. (**hint**: you can also use **Show Table Subobjects** menu item in the dropdown menu of **View Mode** button on the DB Explorer toolbar for the same purpose.)

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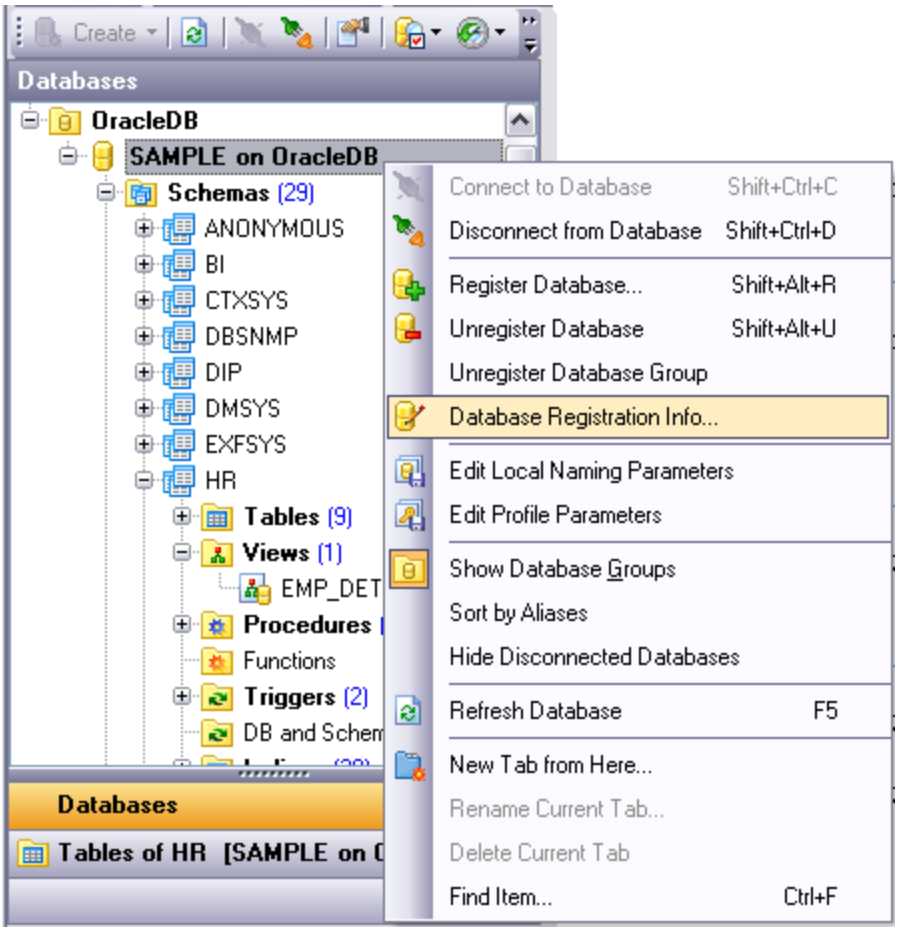
2.5 Using database popup menu

The popup menu of registered database or an object group in the explorer tree allows you to:

- Connect to the selected database.
- Disconnect from the selected database.
- Register new database through the Register Database Wizard.
- Unregister the selected database.
- Unregister the selected database group and all its databases.
- Edit the selected database registration info within the Database Registration Info Dialog.
- Edit local naming parameters to call the TNS File Constructor.
- Edit Profile parameters.
- Customize DB Explorer look (see Configuring Database Explorer).
- Create new tab for the selected database for quick accessing it through this tab.



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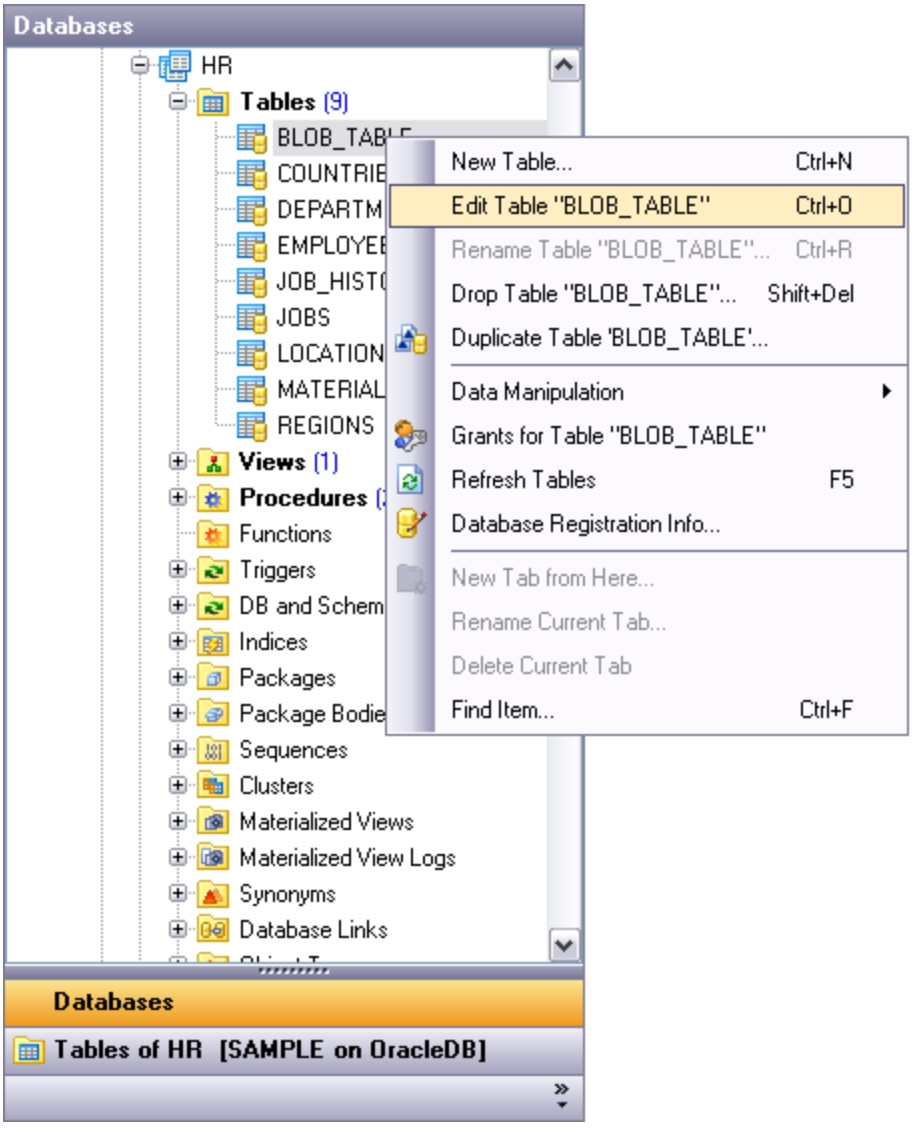
2.6 Using object popup menu

The popup menu of the database object (e.g. table) in the explorer tree allows you to:

- Create a new database object.
- Open the selected object in its editor.
- Rename the selected object (note that not all the objects can be renamed).
- Drop the selected database object.
- Duplicate the selected object (create a new object with the same properties as the selected object has).
- Define grants for the selected object
- Create new tab for the selected node for quick accessing it through this tab.



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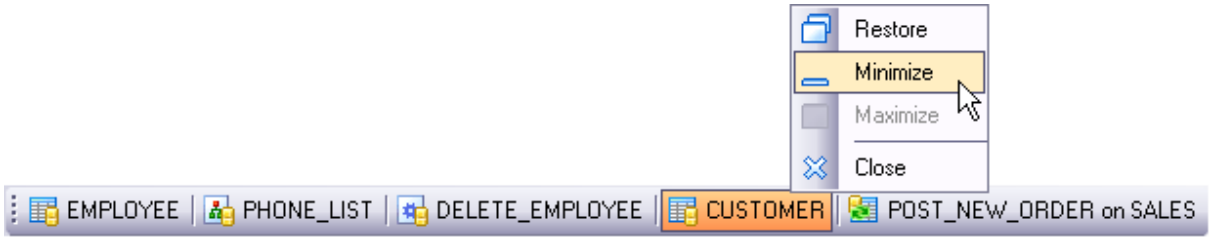
2.7 Switching between windows

The **Windows Toolbar** allows you to switch between child windows easily, like in Windows Task Bar.

To activate the window you need, simply click one of the window buttons. To perform some additional actions with the window, right-click on its button and select appropriate menu item from popup menu.

See also:

Customizing toolbars



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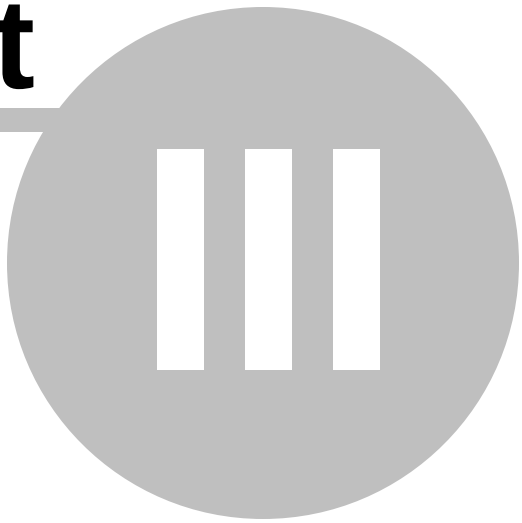
Part



3 Database Explorer

Database Explorer (or **DB Explorer**) is the basic navigation window for working with databases and database objects. Its treelike structure with multiple tabs allows you to perform almost all operations upon the databases and their objects quickly and easily. The following list contains the most common features provided by the **Database Explorer**.

- Managing database registration info
- Connecting to a database
- Performing basic operations upon database objects
- Creating projects to work with selected objects only
- Navigating database objects using multiple tabs
- Selecting multiple objects
- Easy access to recently opened objects
- Viewing information about database objects
- Configuring Database Explorer

To view or hide this window use the **View | DB Explorer** menu item or press F11.

Use the *Ctrl+Shift+C* shortcut to collapse current **DB Explorer** tree branch and switch to the parent node.

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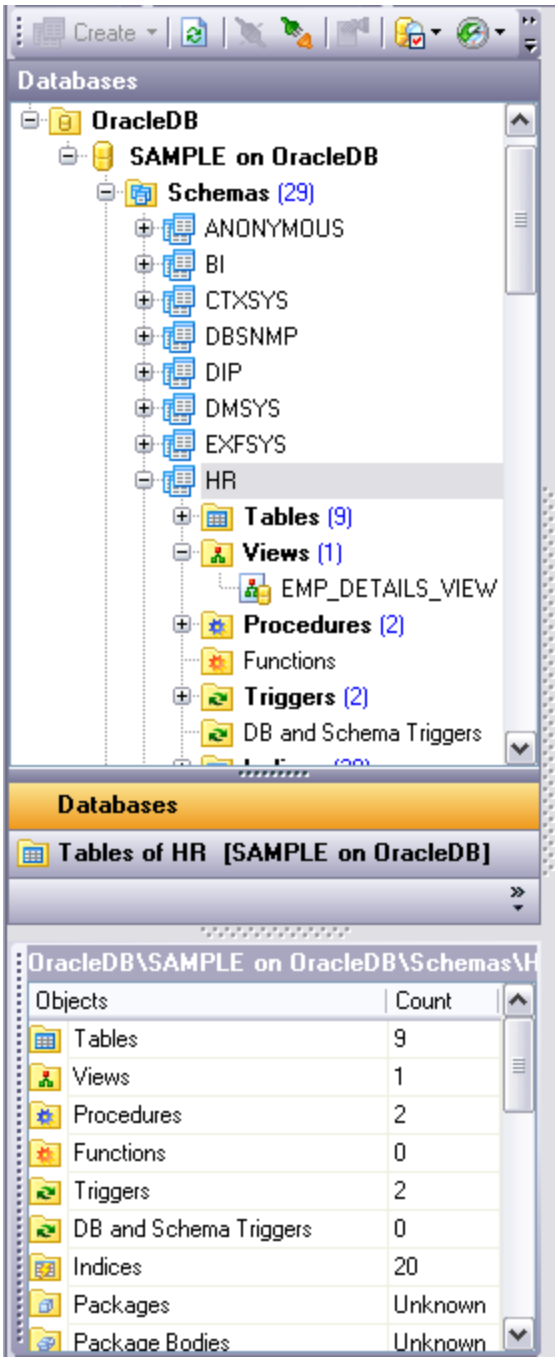

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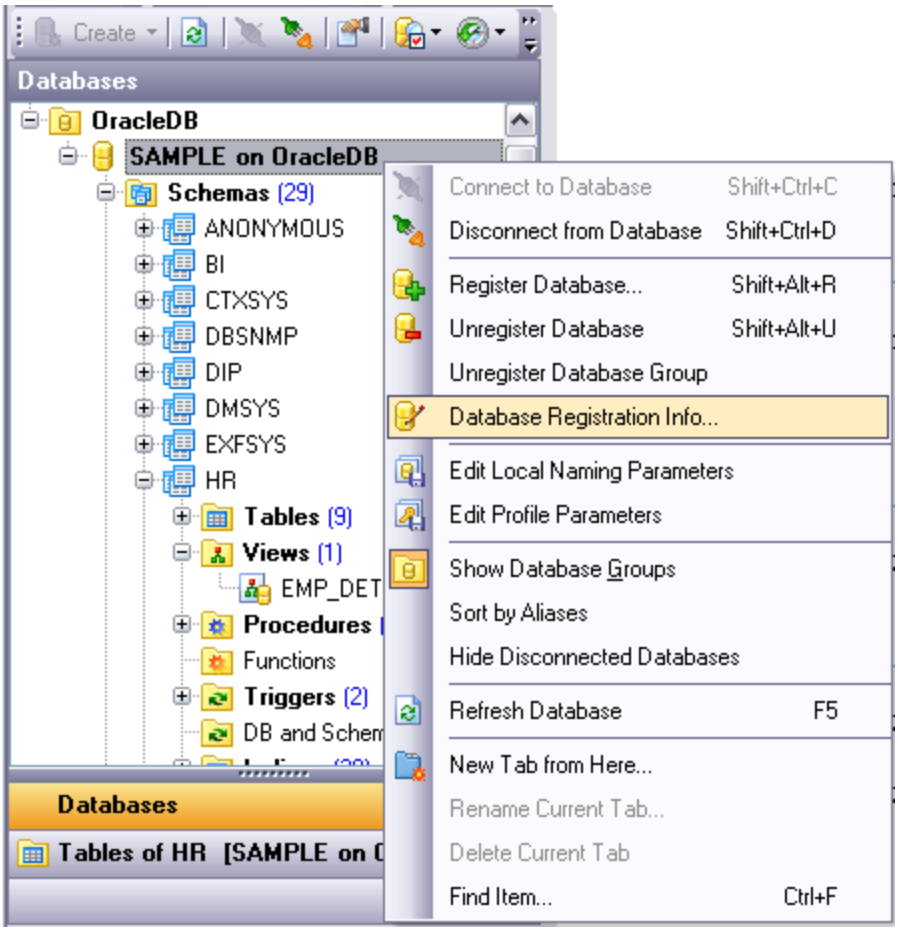
3.1 Managing database registration info

Database Explorer allows you to perform the following operations related with registering databases from its popup menu:

- Register database
- Unregister database
- Edit database registration info



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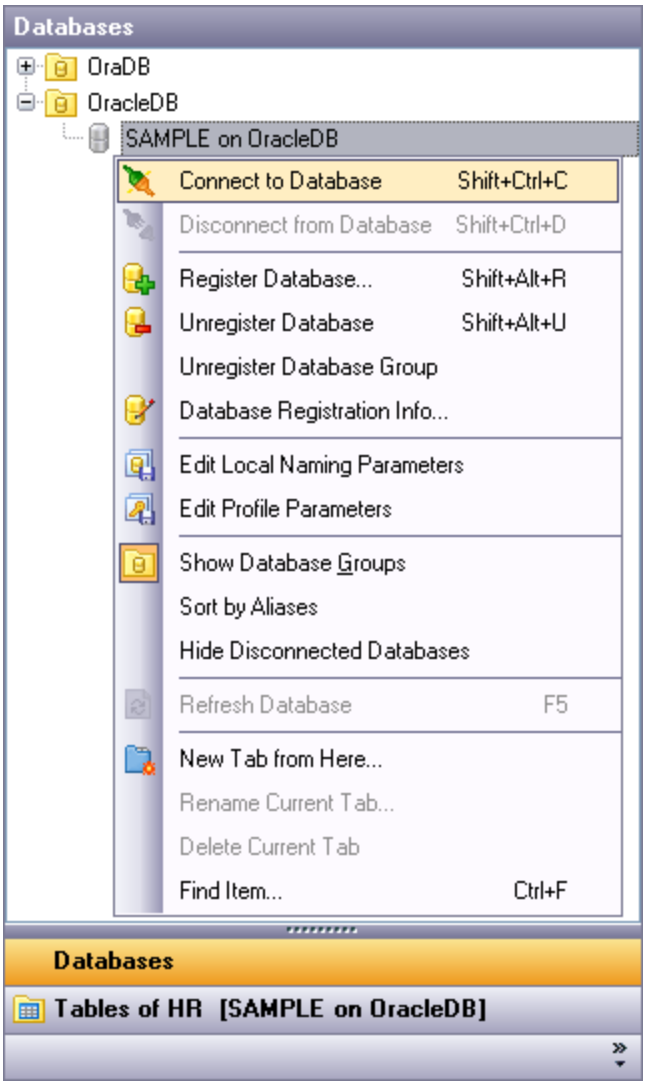
3.2 Connecting to database

The simplest way to connect to a database is to double-click its node in the Database Explorer tree. The same operation is also available by using the **Connect to Database** item from the explorer popup menu, or using the **Database | Connect to Database** main menu item.

Note that you can change database nodes order by dragging them in **DB Explorer** tree.



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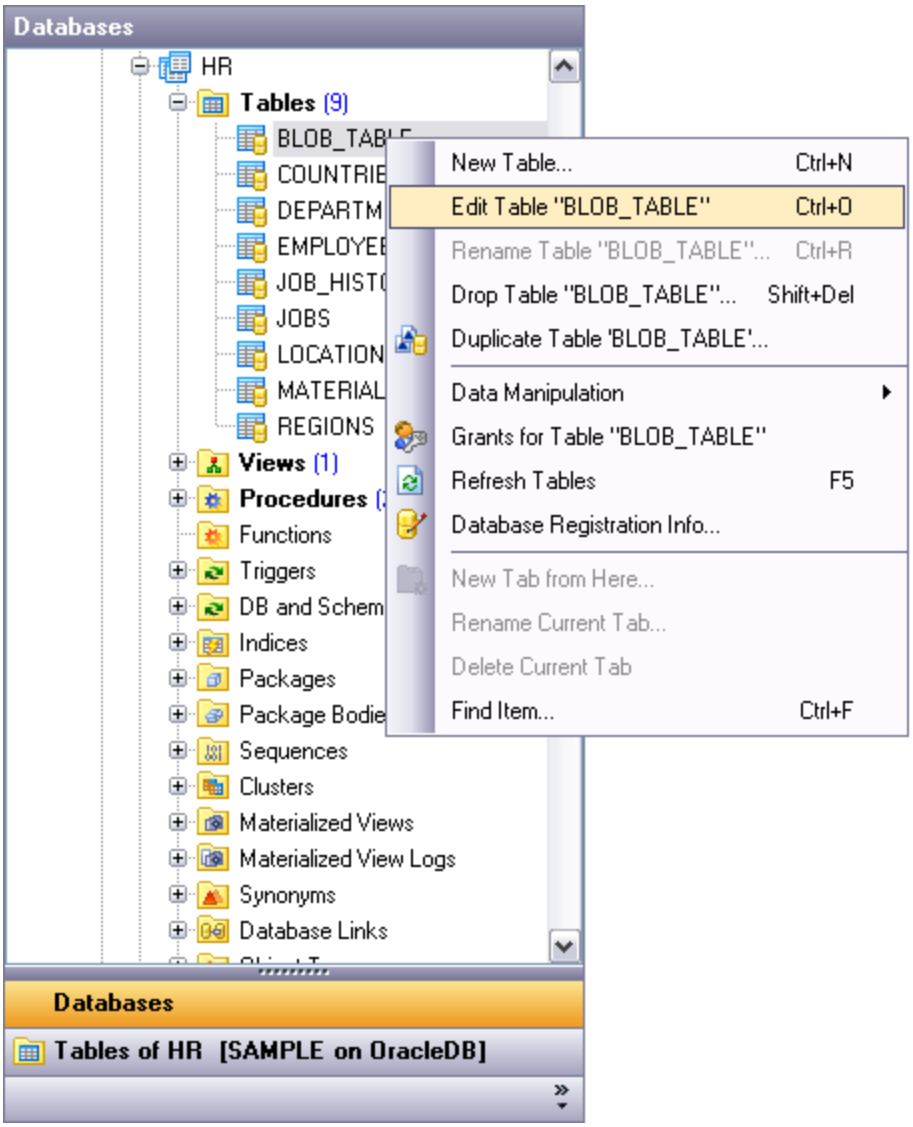
3.3 Performing database object operations

Database Explorer allows you to perform the following operations with database objects by its popup menu. Note that popup menu contains object-specific items only when some database object is currently selected in the explorer tree.

- Create new database object (the **New <object>...** item).
- Edit currently selected database object (the **Edit <object_name>** item).
- Drop selected object from the database (the **Drop <object_name>** item).
- Rename selected database object (the **Rename <object_name>** item).
- Duplicate selected object (the **Duplicate <object_name>** item).

To open the database object with its editor, you can also double-click it in the DB explorer tree.



Note that you can distinguish invalid database objects by their icons which are marked

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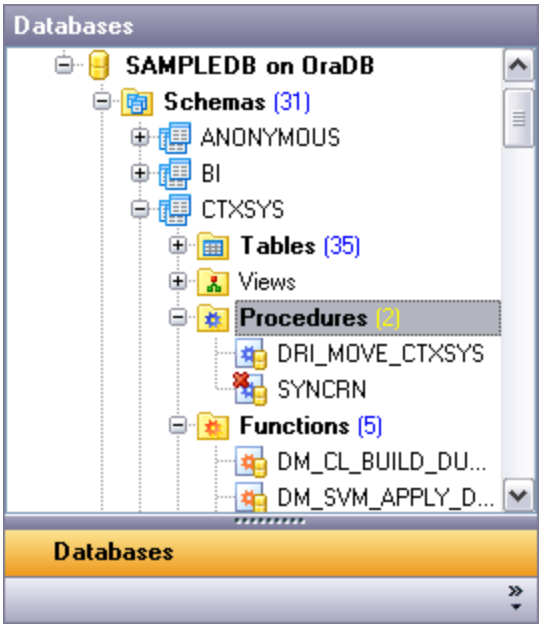
with a cross. In the screenshot below you can see that stored procedure 'SYNCRN' is invalid because of some errors in its syntax.



See also:

New Object

Duplicate Object

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3.4 Creating projects

Use the **Projects** node in each database to work with the selected objects of this database only. You can place here any object from the database tree.

Creating project

- Create a folder (and maybe some subfolders) by right-clicking the **Projects** node and selecting the **New Folder** menu item.
- Specify the new object name in the dialog window.

Adding project

- Drag the object(s) from the database tree and drop it to the project folder, or
- Select the **Add Object** item from the context menu of the desirable project folder, corresponding dialog window will appear.

Note: You can also create separate tab for your project. See Navigating database objects with tabs section.

Removing object from project

To remove an object from the project:

- Right-click the object and select the **Remove Object** menu item.
- Confirm removing in the dialog window

Note: This does not drop the object out of database, but only removes it from the project tree.

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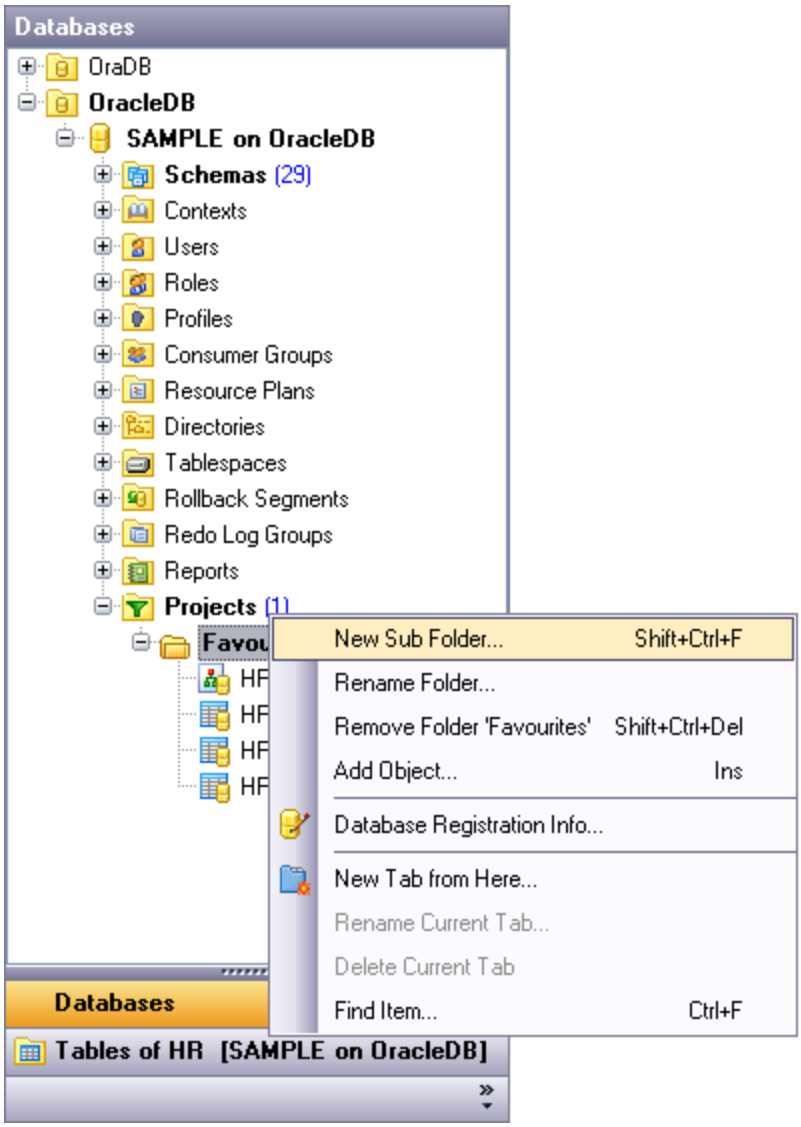

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3.5 Navigating database objects with tabs

To make your work with Database Explorer even more convenient, SQL Manager 2007 for Oracle supports working with several tabs in Database Explorer. Use tabs when you wish to work only with exact node of explorer tree: with one specific database, with tables of some database or with specific database project. Creating such tabs will minimize scrolling on the large trees. For example, you can create a tab for each registered database and switch between them with a single click on a tab.

Creating tab

To create a new tab:

- Right-click the node for which you wish to create a tab and select **New Tab from Here...** menu item.

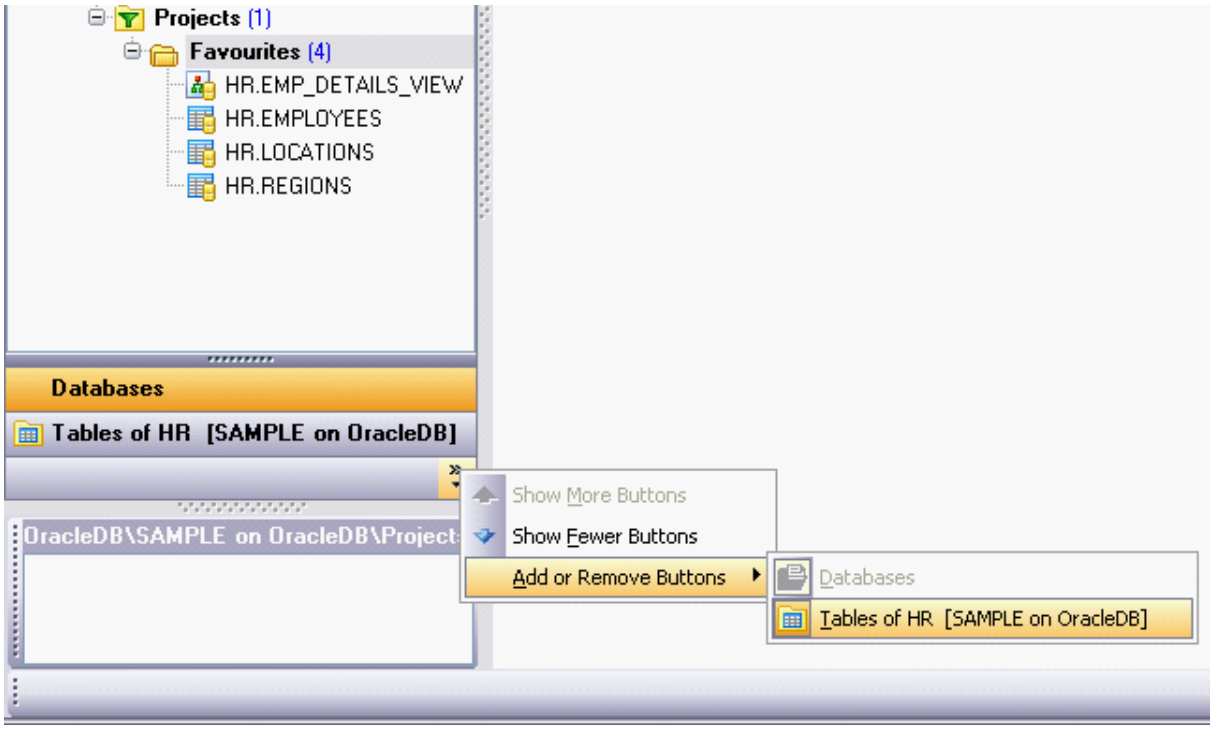
Removing tab

To remove the tab:

- Move to this tab by clicking on it's shortcut
- Right-click the Database Explorer and select **Delete Current Tab** menu item.

Note: Navigating through the tabs is also possible with the help of shortcuts

- *Ctrl+Shift+N* - Next tab;
- *Ctrl+Shift+P* - Previous tab;



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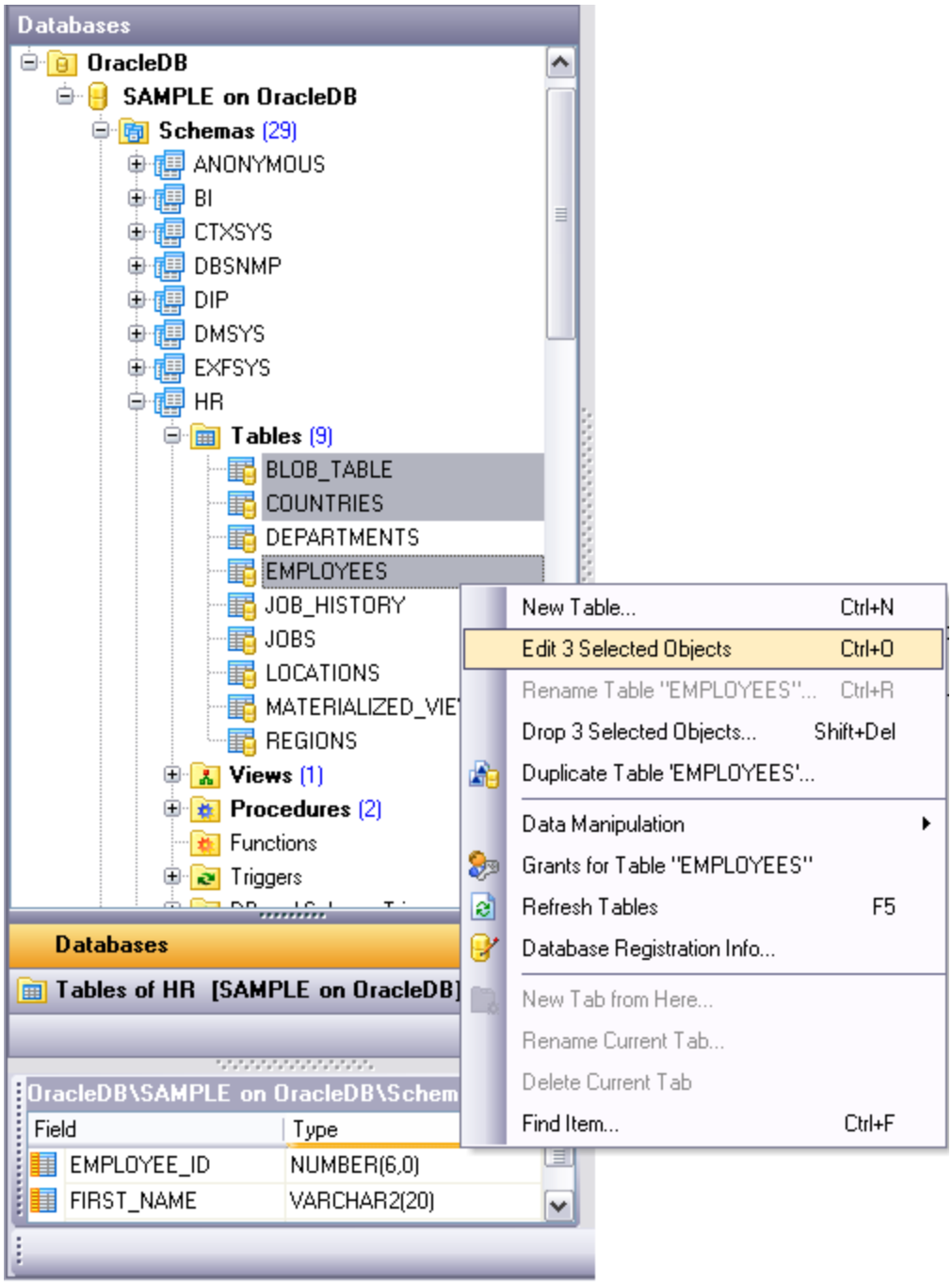
3.6 Selecting multiple objects

You can select more than one object in Database Explorer by pressing the *Ctrl* key and selecting these objects clicking on them to perform the following actions:

- Edit database objects
- Drop database objects
- Drag these objects to the projects (See Creating Projects)



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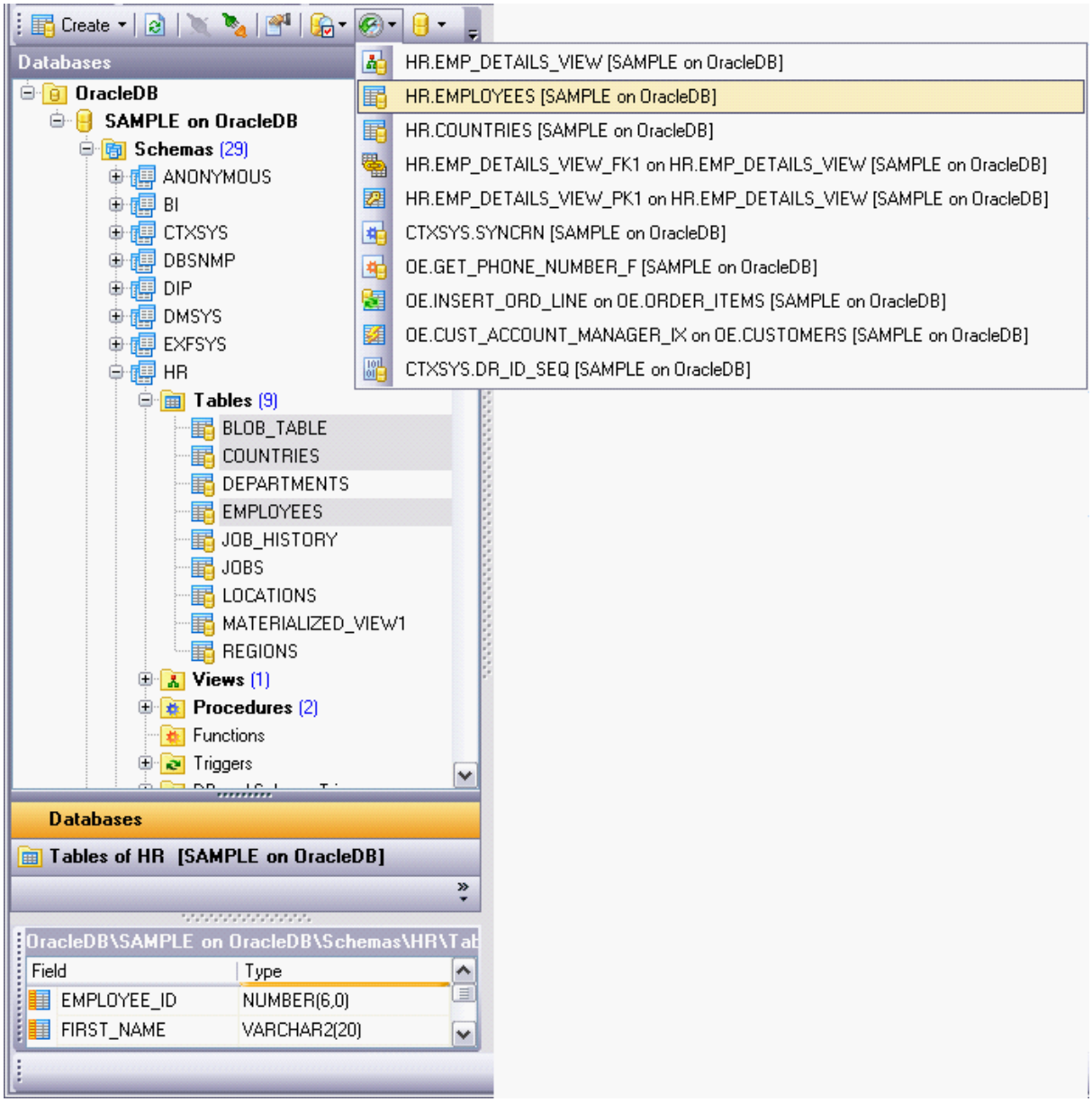
3.7 Recently opened objects

Use **Recent Objects** button on the Database Explorer toolbar to access the list of recently opened database objects (during the current work session). This list is common for all the databases. Next to the object name the database name is displayed. Select the object from this list to open it with the editor.

To change the number of objects, considered 'recent' select the **Options | Environment Options** menu item and set the **Recent objects count** option value on the **Tools | DB Explorer** page (see Environment Options for details).



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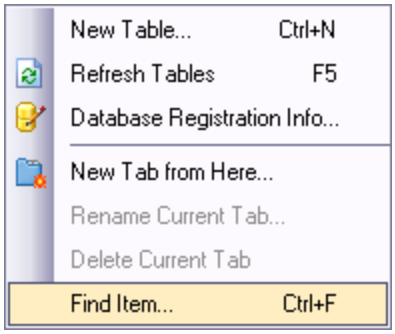
3.8 Finding database elements

SQL Manager 2007 for Oracle provides the ability to search for items in DB Explorer tree. It may be useful if you have lots of database objects and sometimes it may be hard to find one that you need.

To call the **Find Item** dialog right-click the **Database** node of the explorer tree and select the **Find Item...** item from the popup menu or simply use the *<Ctrl + F>* key shortcut.



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3.9 SQL Assistant

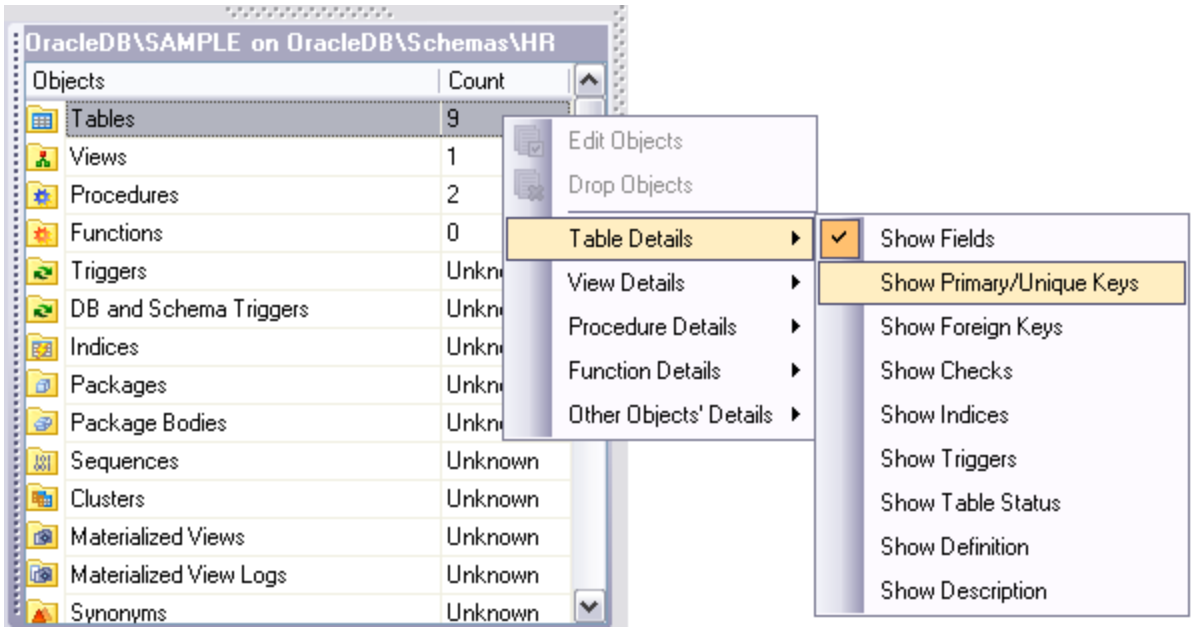
This area helps you to work with the **DB Explorer** window, displaying the additional information about the selected object or group of objects.

If you select a server in the **DB Explorer**, the **SQL Assistant** displays the list of the registered databases, where those you are connected to, are displayed in bold. Double-clicking the database alias in the **SQL Assistant** connects you to the database or disconnects you from it.

If you select a database in the **DB Explorer**, the **SQL Assistant** displays the list of the database object groups and a number of objects for each group. Selecting an object group in the **DB Explorer** displays the list of objects in the **SQL Assistant**. Double-clicking the object name in the **SQL Assistant** makes the object available for editing in the proper editor window. Right-clicking the object or group of objects (selected with the Ctrl or Shift buttons) allows you to edit or drop the selected objects.

What is displayed in **SQL Assistant** when a table is selected in **DB Explorer** depends on the position of the **Tables' Details** switch. It can be called via the **View Mode** button **| Tables' Details** menu on the toolbar or via the popup menu of the **SQL Assistant**.

Selecting other objects in the **DB Explorer** displays its DDL definition or description in the SQL Assistant depending on position of the **Other Objects' Details** switch. It can be called via the **View Mode** button **| Other Objects' Details** menu on the toolbar or via the popup menu of the **SQL Assistant**.



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3.10 Configuring Database Explorer

Use **View Mode** button on the Database Explorer toolbar to configure Database Explorer for your needs.

The dropdown menu of this button allows you to:

- Show/hide table subobjects as child nodes of database objects.
- Show/hide view subobjects as child nodes of database objects.
- Show/hide host nodes for registered databases.
- Sort list of databases by its aliases.
- Hide disconnected databases from the tree.
- Setup the SQL Assistant area.

Use **Environment Options... | DB Explorer** to see more options configuring DB Explorer.

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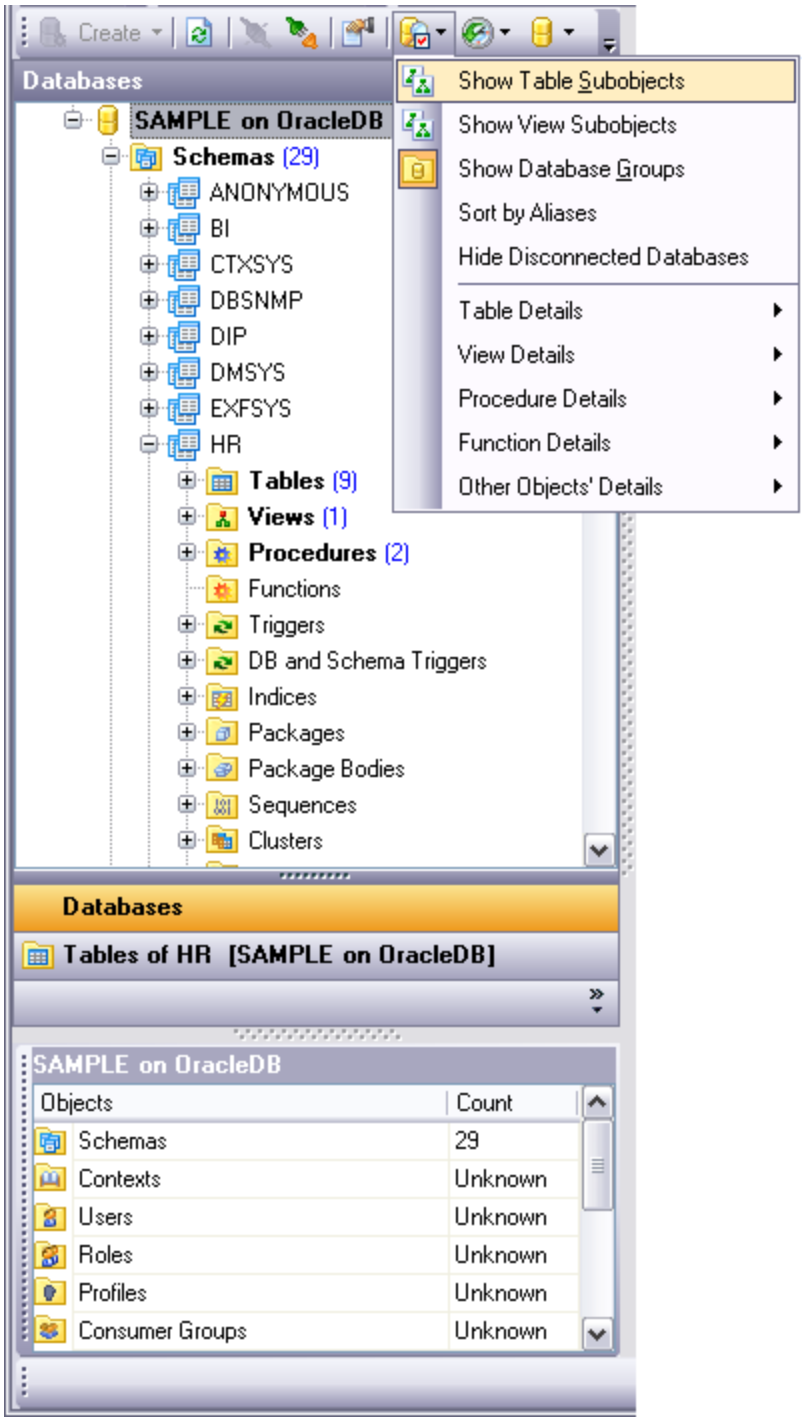

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Part

4 Database Management

SQL Manager 2007 for Oracle provides all the tools you need to manage and navigate databases. Note that to start working with databases in SQL Manager 2007 for Oracle you are to register them (see Register Database Wizard).

Register Database

To register a single database in SQL Manager 2007 for Oracle
- Select the **Database | Register Database** menu item.
- Set connection, authorization and other options in the Register Database Wizard.

Unregister Database

To unregister a single database
- Select the database to unregister in the DB Explorer tree.
- Select the **Database | Unregister Database** menu item.
- Confirm unregistering in the dialog window.

Connect to Database

To connect to a database
- Select the database to connect to in the DB Explorer tree.
- Double click its alias.
  or
- Select the **Database | Connect to Database** menu item.

Disconnect from Database

To disconnect from a database
- Select the database to disconnect from or any of its objects in the DB Explorer.
- Select the **Database | Disconnect from Database** menu item.

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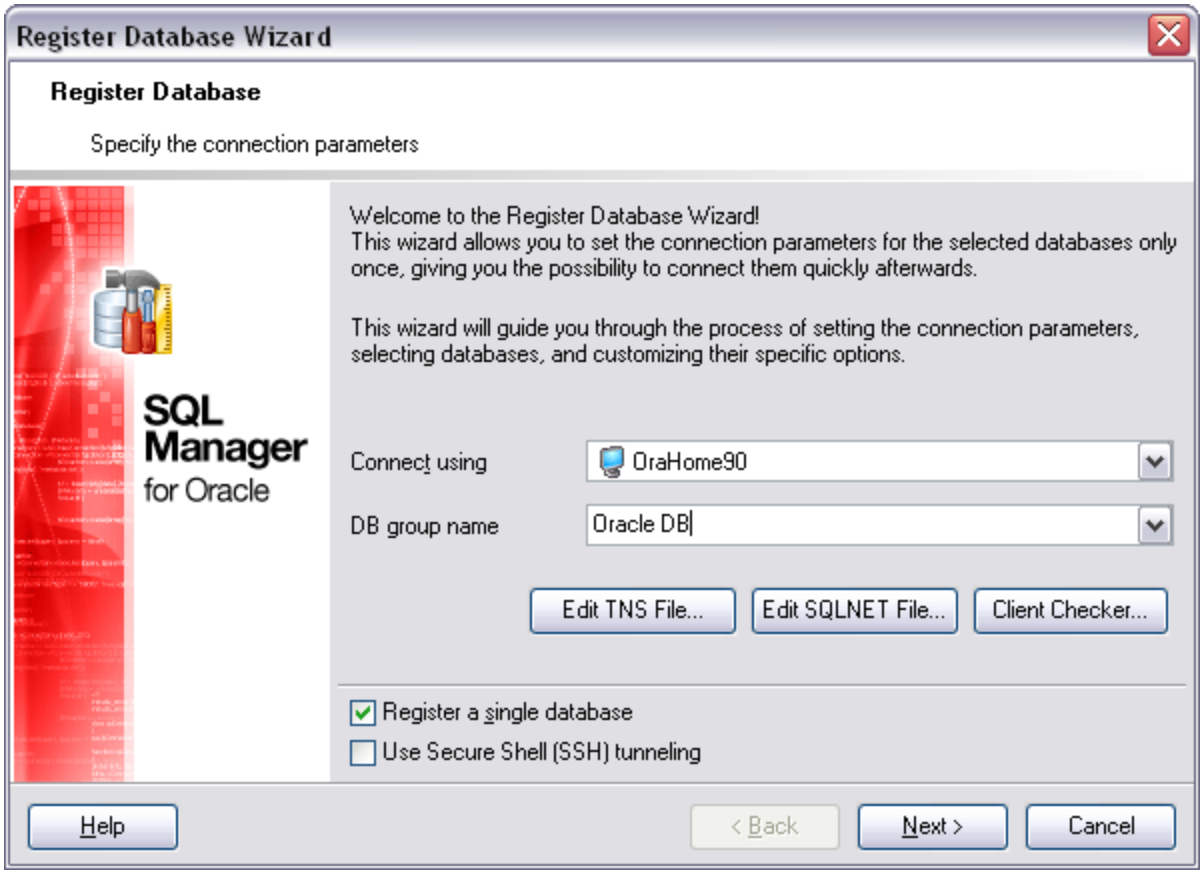
4.1 Register Database Wizard

The **Register Database Wizard** allows you to register a single database. To open the wizard select the **Database | Register Database...** menu item, or press Shift+Alt+R. You can also use the **Register Database** button on the main toolbar.

- Setting connection properties
- Setting registration options
- Using templates

See also:

Oracle client checker


Register Database Wizard
Register Database
Specify the connection parameters
SQL Manager for Oracle
Welcome to the Register Database Wizard!
This wizard allows you to set the connection parameters for the selected databases only once, giving you the possibility to connect them quickly afterwards.
This wizard will guide you through the process of setting the connection parameters, selecting databases, and customizing their specific options.
Connect using
OraHome90
DB group name
Oracle DB
Edit TNS File...
Edit SQLNET File...
Client Checker...
Register a single database
Use Secure Shell (SSH) tunneling
Help
< Back
Next >
Cancel

4.1.1 Setting connection properties

Set the connection properties in the corresponding boxes: database name and optional alias for it, authentication type, user name, password.

Windows authentication
Use Windows Integrated Security for the login. If you are editing an existing login, this option cannot be altered. If you are creating a new login, clicking this option activates the options below it.

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Server authentication
Use server authentication for the login. Server Authentication stores logins and passwords in server and does not depend upon Windows.

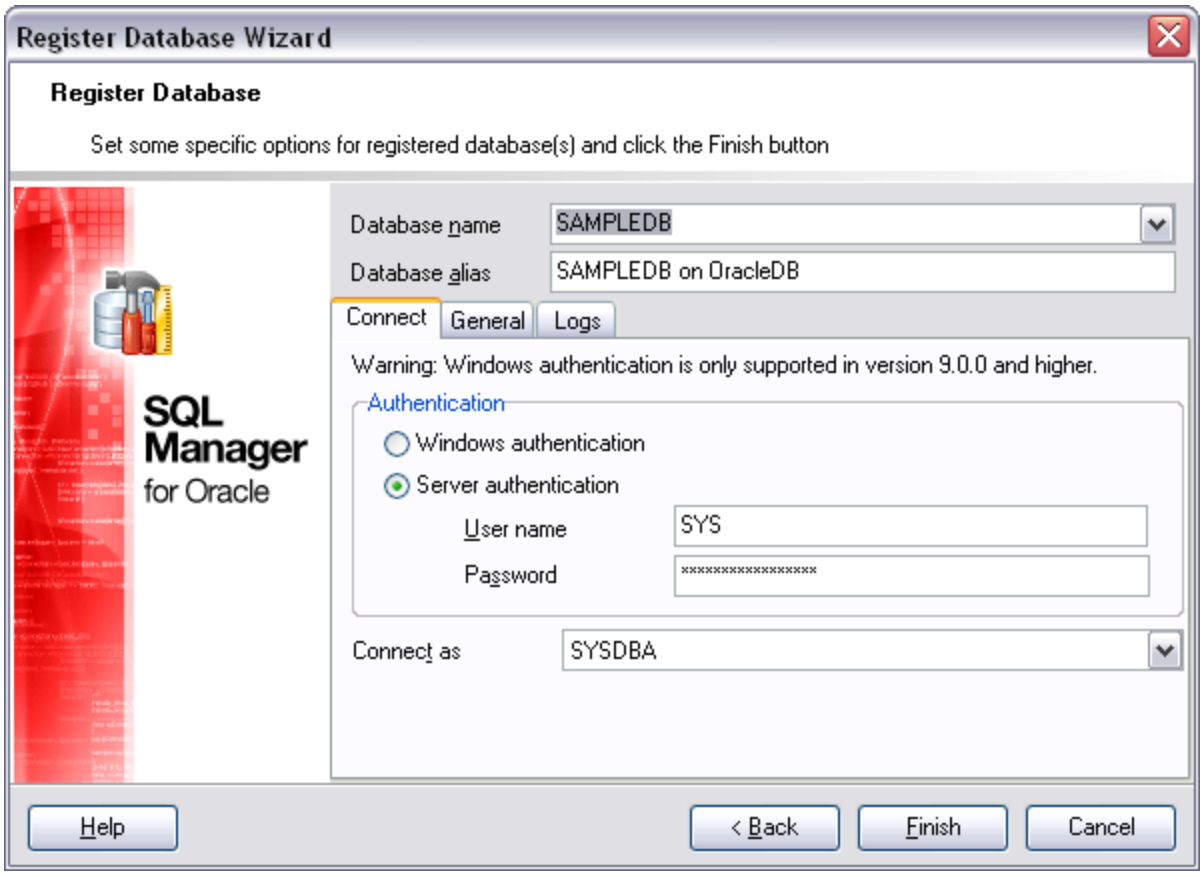
User name
User name for connecting to the database server.

Password
Password for connecting to the server.

Connect as
Select a system role to login - SYSDBA, SYSOPER, Normal.

Database name
Select the database name to register from the drop-down list.

Database alias
Any database alias that is convenient for you (e.g. MyTestDatabase). This alias will be displayed in the DB Explorer window.



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4.1.2 Setting registration options

Enter the database name and set the database alias and other options.

Font charset
Character set to display data in the grid.

Login prompt before connection
Enables SQL Manager 2007 for Oracle to prompt for user name and password each time you connect to the database.

Autoconnect on startup
With this option on SQL Manager 2007 for Oracle automatically establishes connection with the registered database at application startup.

Refresh objects on connection
This option allows to skip refreshing objects on connection to database is added. It is highly recommended to uncheck this option if your database contains many objects or if connection to the database is slow.

Rollback on disconnect
All active transactions are rolled back on disconnect from the server.

At the **Logs** tab specify log file names for metadata changes logging and SQL query logging, if necessary.

Click the **Finish** button when done to start working with the selected databases in SQL Manager 2007 for Oracle.

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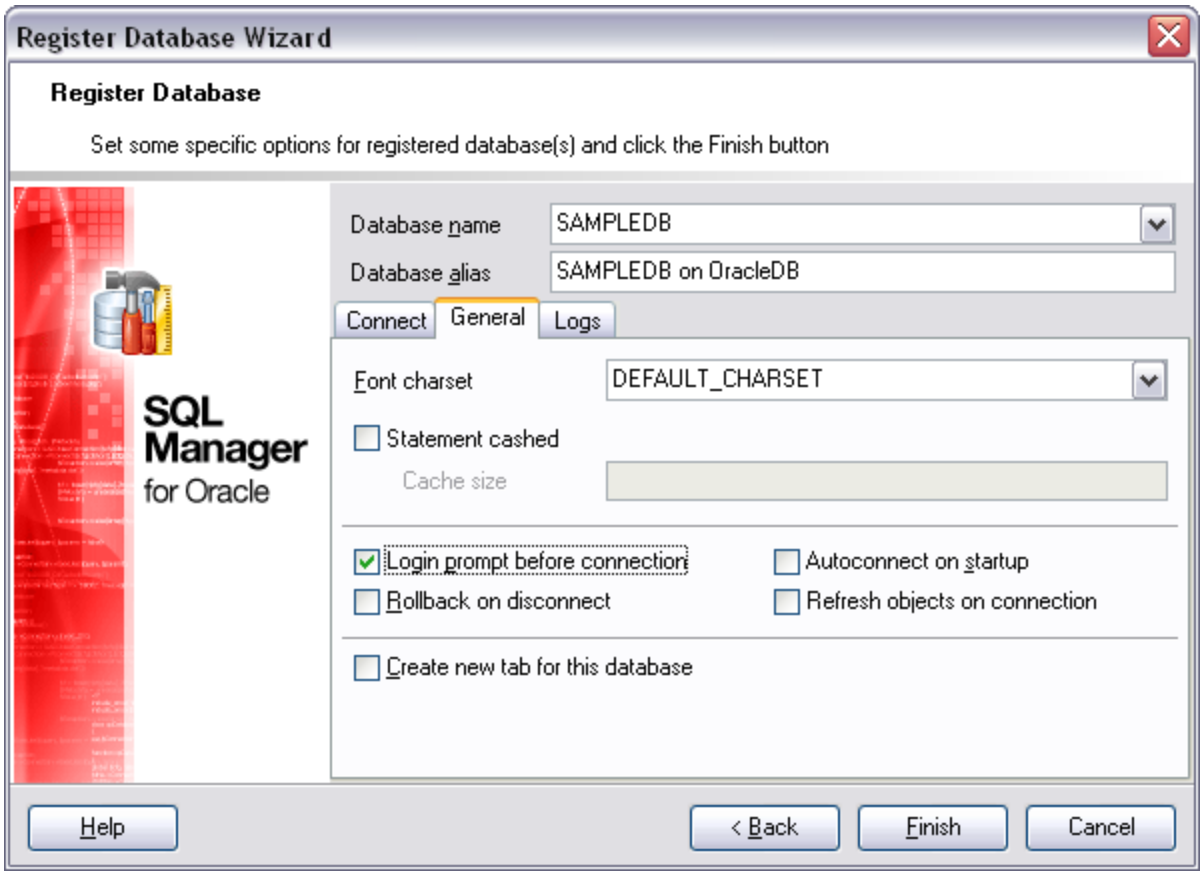

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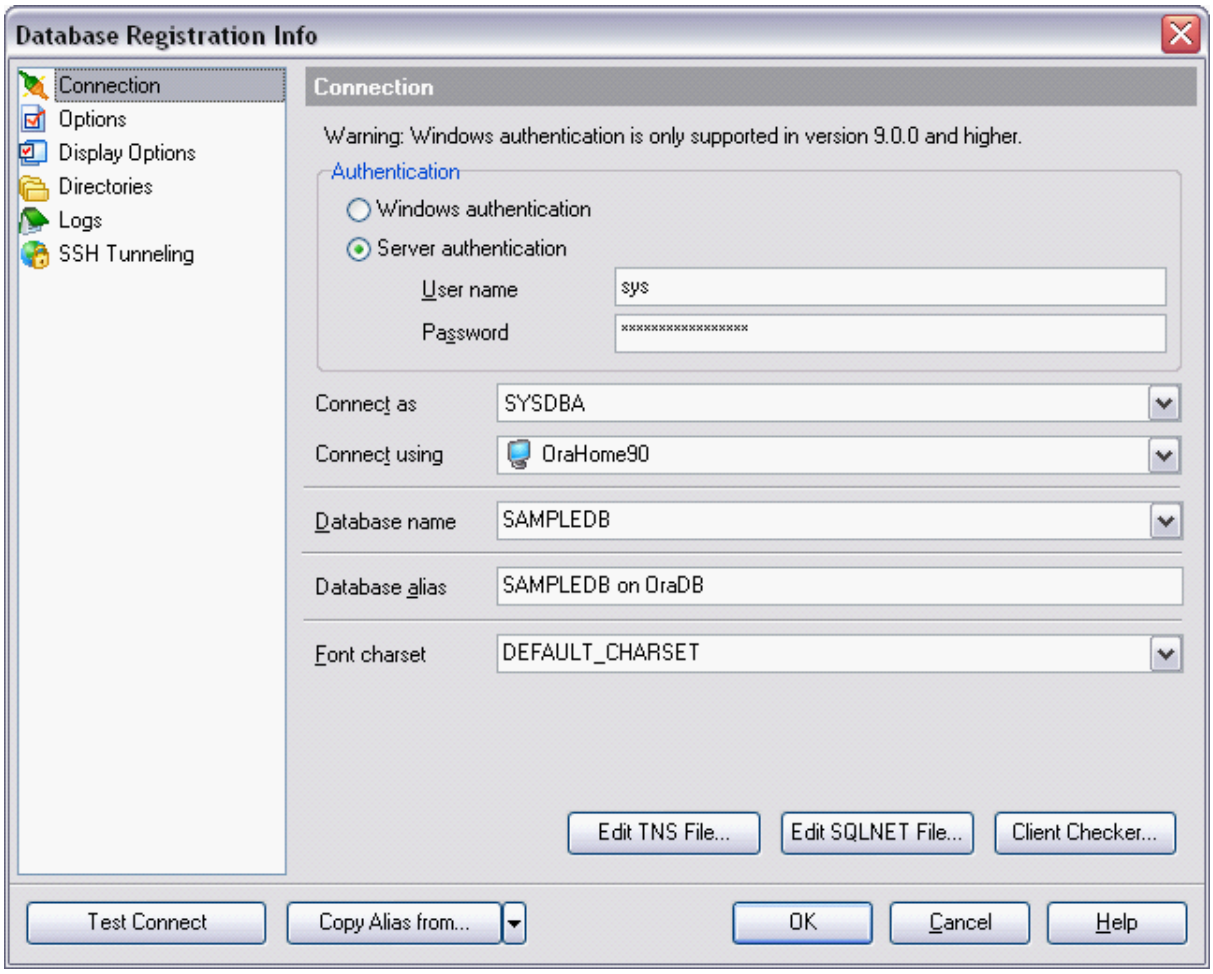
4.2 Database Registration Info

Use the **Database Registration Info** dialog to edit the properties of registered database, set on its creation. To open the dialog, select the database in the explorer tree, then select the **Database | Database Registration Info...** menu item. You can also use the corresponding button of the main toolbar.

- Editing connection properties
- Setting database options
- Setting display options
- Setting default directories
- Setting log options
- Setting SSH tunnel options



4.2.1 Editing connection properties

Edit the connection properties in the corresponding boxes: authentication type, user name and password. Also you can edit database alias - an optional name to display the database in the explorer tree and all the program tools.

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Windows authentication
Use Windows Integrated Security for the login. If you are editing an existing login, this option cannot be altered. If you are creating a new login, clicking this option activates the options below it.

Server authentication
Use server authentication for the login. Server Authentication stores logins and passwords in server and does not depend upon Windows.

User name
User name for connecting to the database server.

Password
Password for connecting to the server.

Connect as
Select a system role to login - SYSDBA, SYSOPER, Normal.

Database name
Select the database name to register from the drop-down list.

Database alias
Any database alias that is convenient for you (e.g. MyTestDatabase). This alias will be displayed in the DB Explorer window.

Font charset
Character set to display data in the grid.

Press the **Edit TNS File** and Edit SQLNET File buttons to edit the Profile parameters and set connection parameters within the TNS File Constructor.

See also:
Oracle client checker

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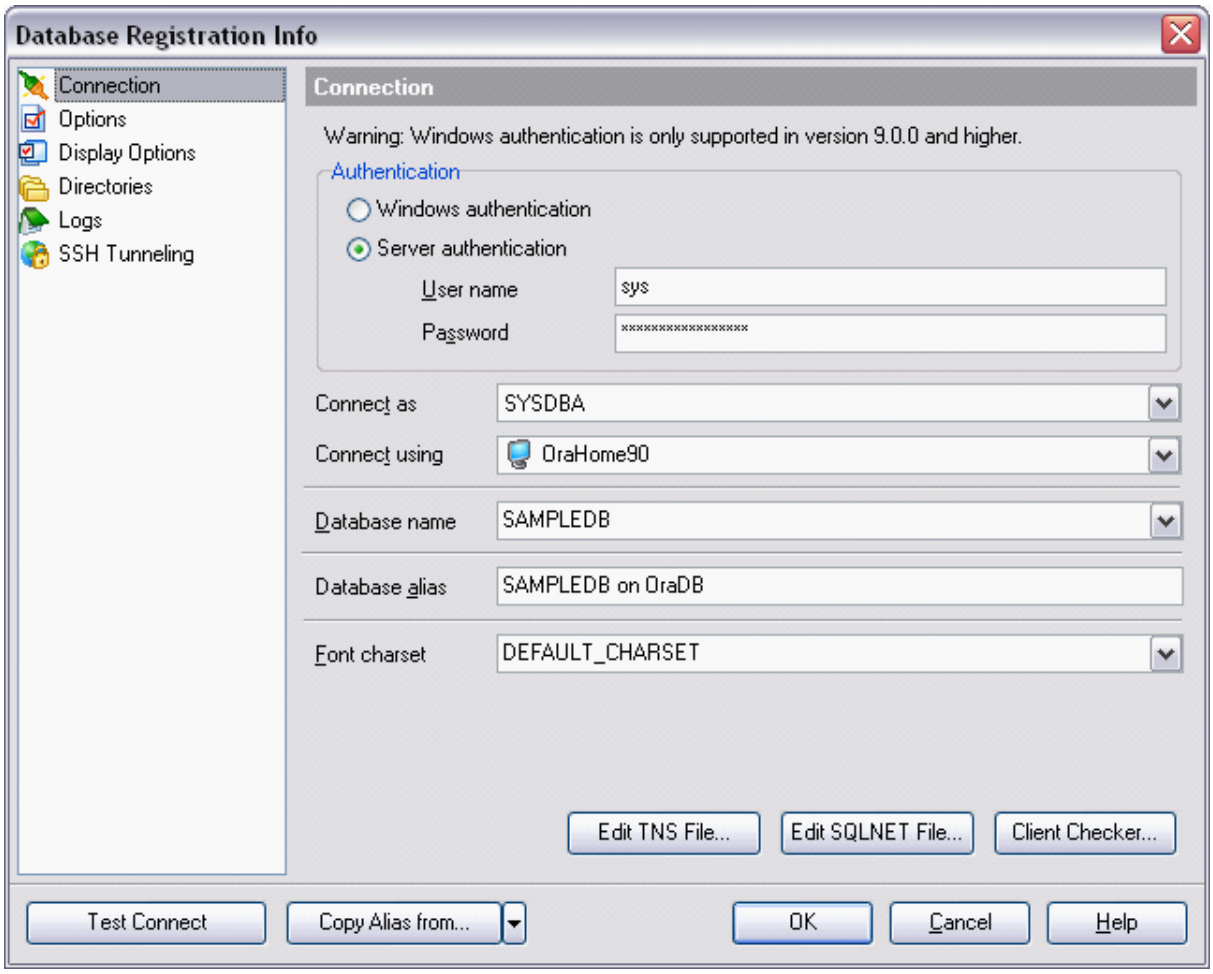

4.2.2 Setting database options

Customize database options according to your needs. The detailed description is given below.

Login prompt before connection
Enables SQL Manager 2007 for Oracle to prompt for user name and password each time you connect to the database.

Autoconnect on startup
With this option on SQL Manager 2007 for Oracle automatically establishes connection with the registered database at application startup.

Refresh objects on connection
This option allows to skip refreshing objects on connection to database is added. It is highly recommended to uncheck this option if your database contains many objects or if connection to the database is slow.

Rollback on disconnect
All active transactions are rolled back on disconnect from the server.

Enable trace

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Creates a trace log file at the client side which allows you to view statistics data on sessions, connections, etc.

Auto commit
When checked, applying transactions is automatic.

Decimal separator
Define the separator which will be used for floating point type values.

Optimize goal
Establishes the default behavior for choosing an optimization approach for the instance.

AllRows
The optimizer uses a cost-based approach for all SQL statements in the session regardless of the presence of statistics and optimizes with a goal of best throughput (minimum resource use to complete the entire statement).

FirstRows
The optimizer uses a mix of cost and heuristics to find a best plan for fast delivery of the first few rows.

Statement cashed

Schema restriction
Allows to hide a schema to disable refreshing its objects. Note that the SYS schema cannot be restricted

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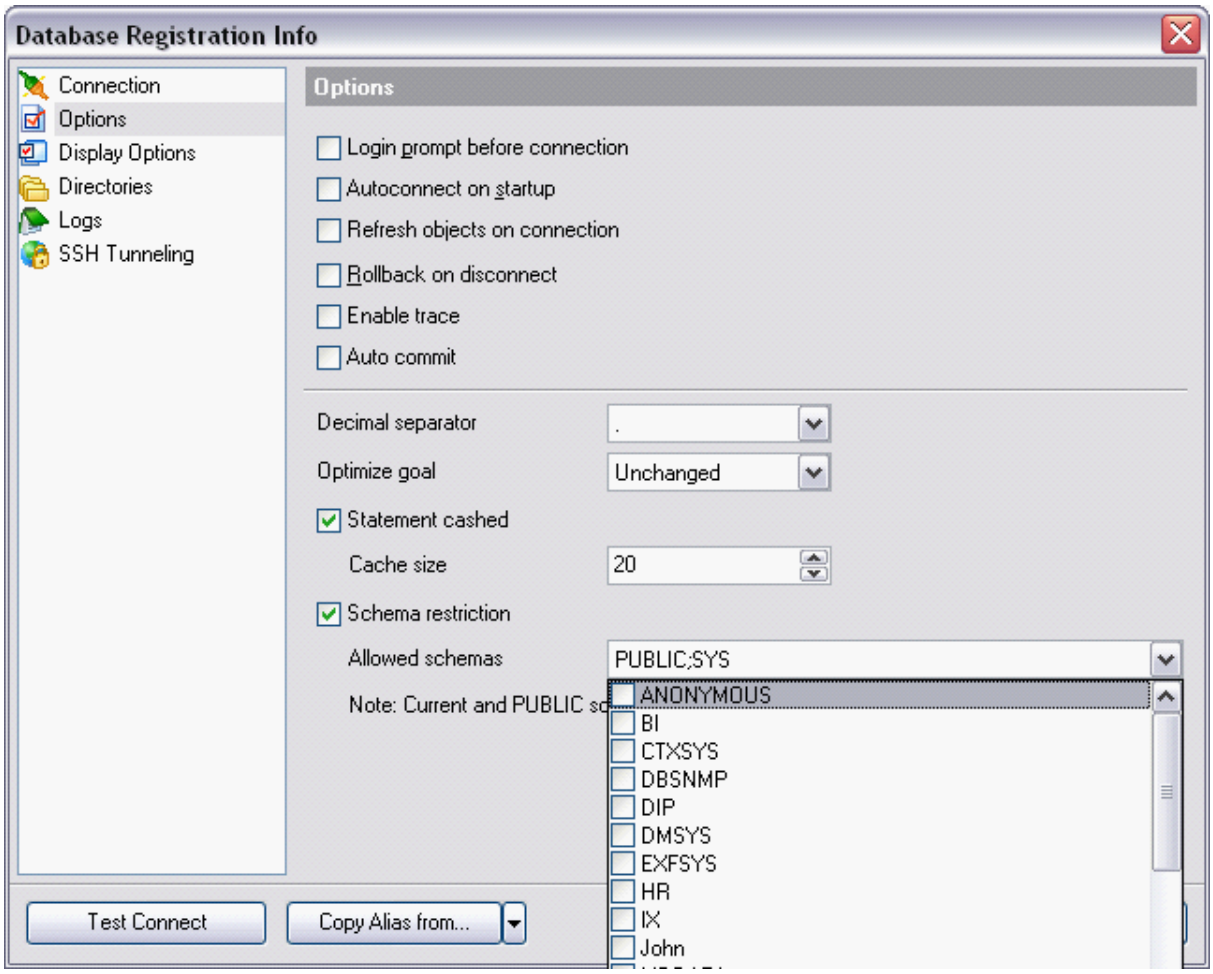

4.2.3 Setting display options

Specify objects you wish to display in the Database Explorer tree.

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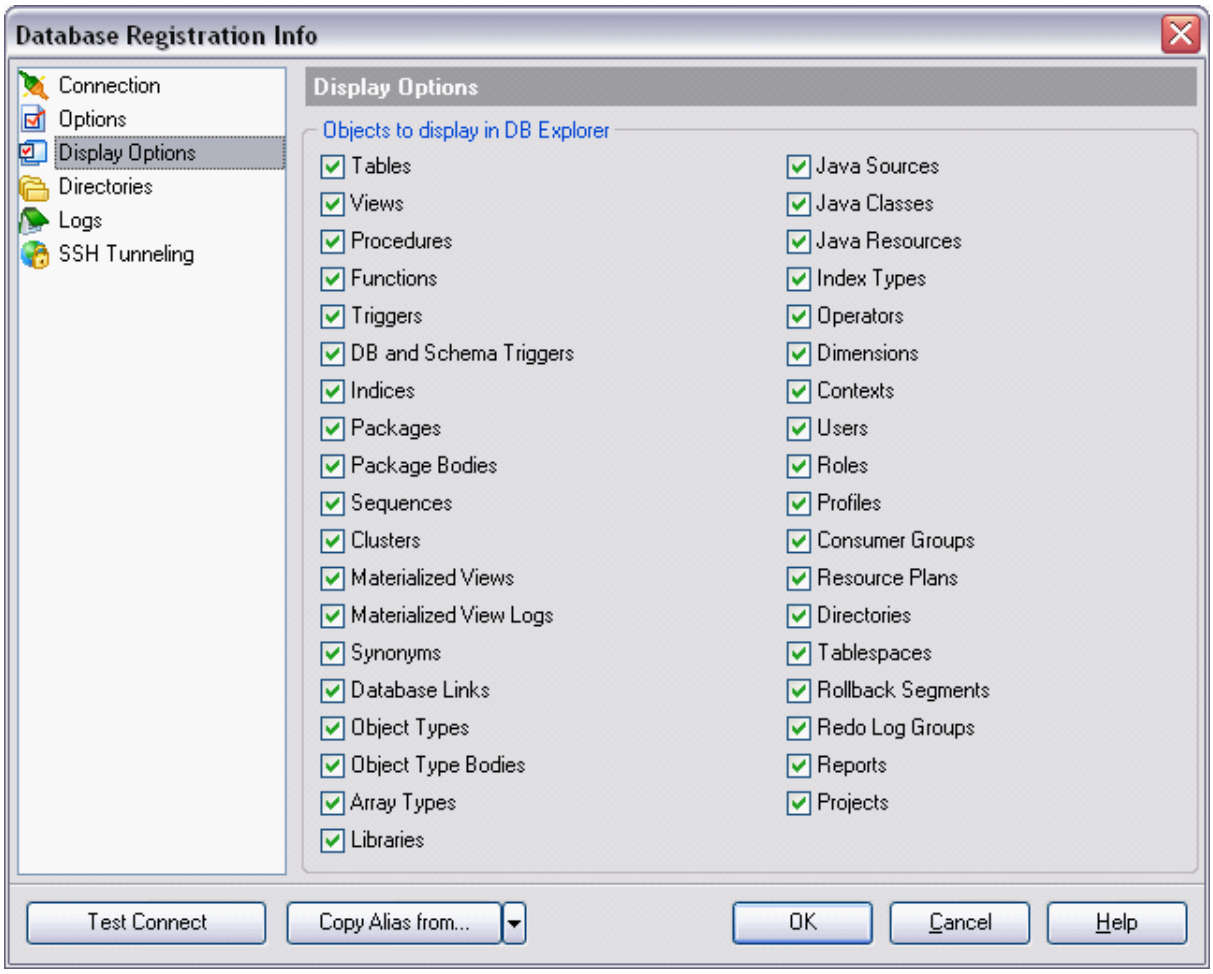

4.2.4 Setting default directories

Set the default directories for database extract, data export, data import, and misc. (e.g. these paths will be used by default when saving HTML reports).

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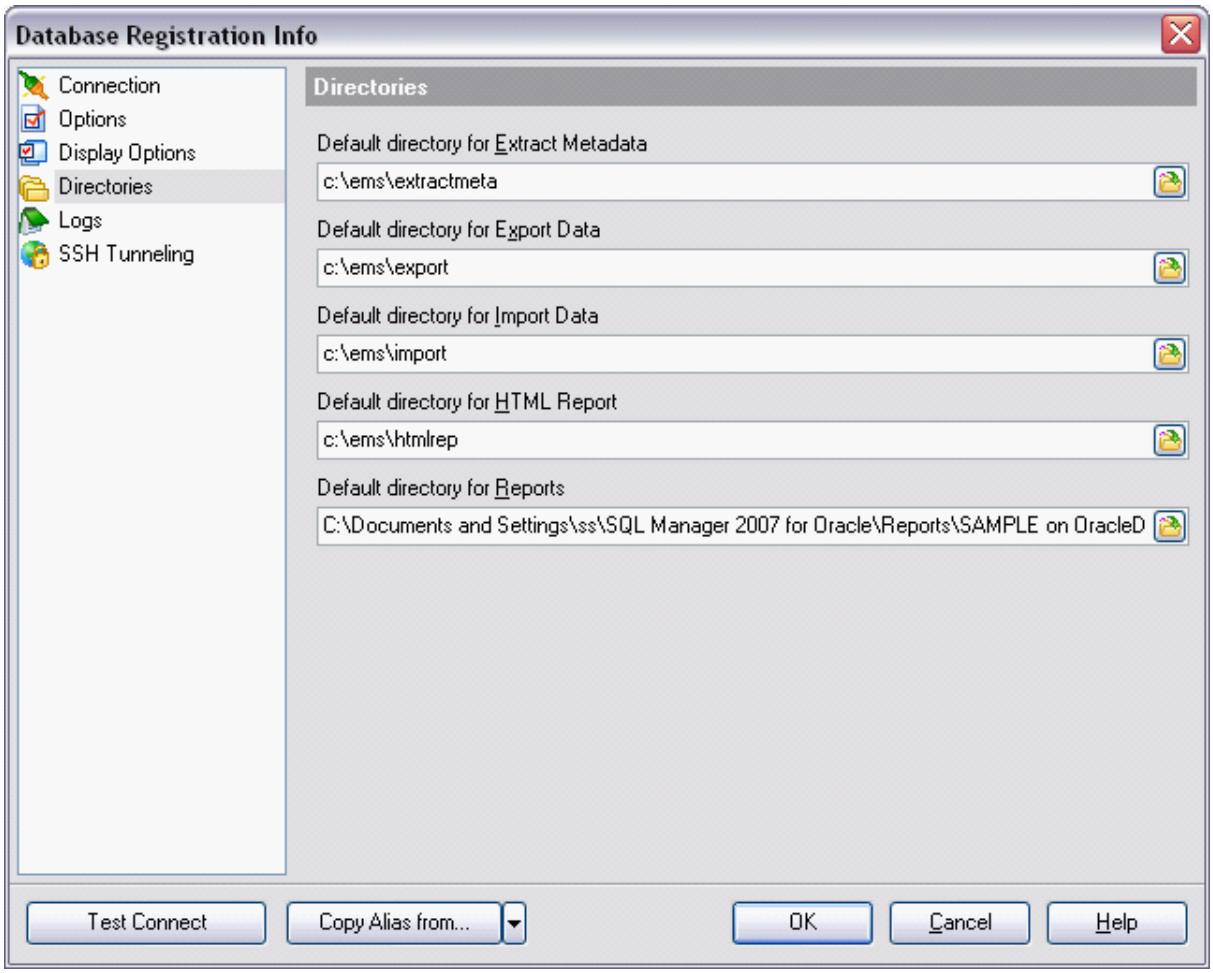

4.2.5 Setting log options

Specify log file names for metadata changes logging and SQL query logging, if necessary.

Note: This log is useful when you are going to move changes made in development database to the production database.

Metadata Changes
You can enable logging all the metadata changes to the SQL log file. Check the **Enable Logging Metadata Changes** option and set the name of the log file. All metadata changes within the current database will be logged to the specified file.

SQL Editor
Check this option and set the name of the log file to enable logging SQL queries and error messages to the SQL log file. All the queries prepared or executed in SQL Editor and Visual Query Builder will be logged to the specified file.

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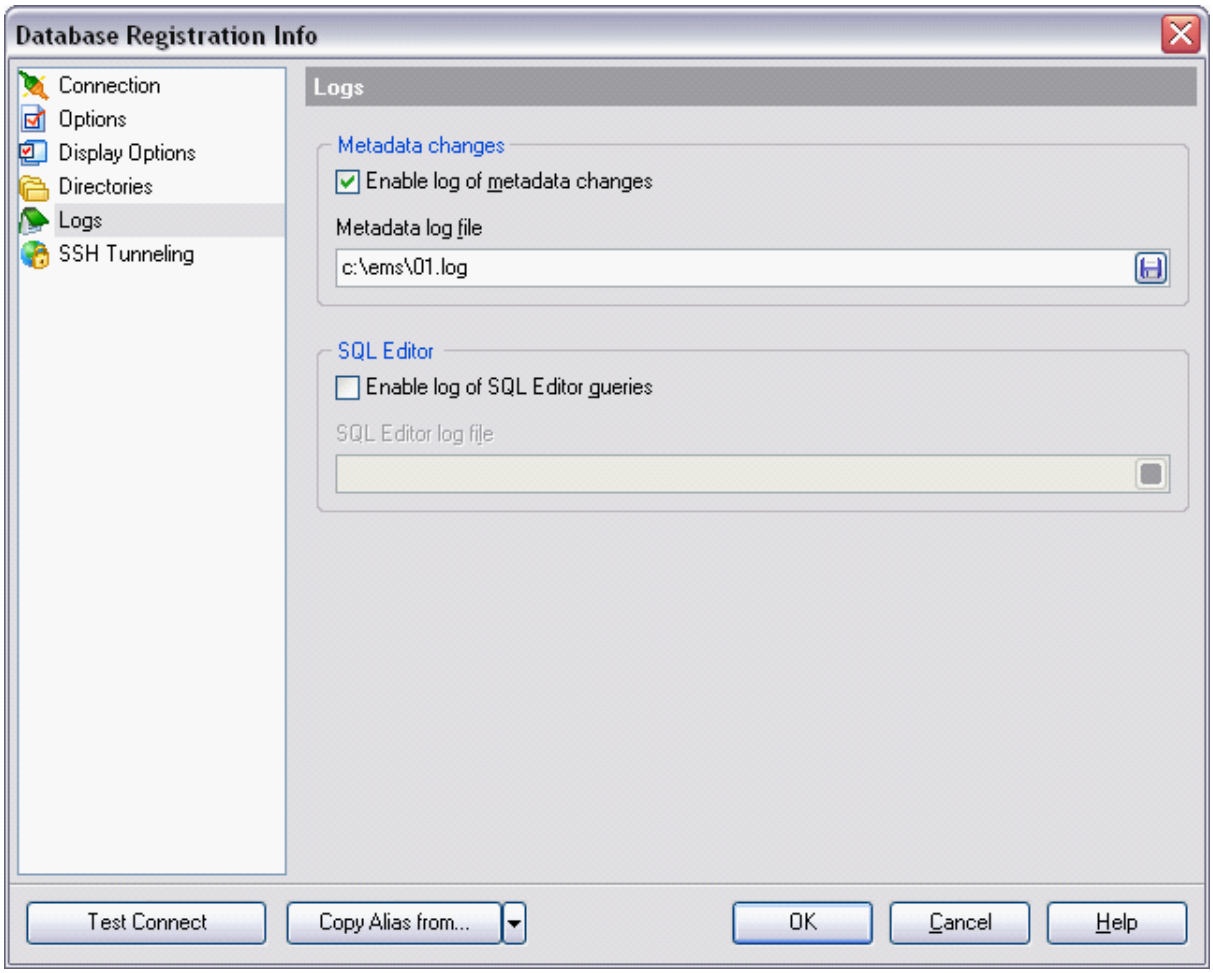

4.2.6 Setting SSH tunnel options

Check the **Connect through the Secure Shell (SSH) tunnel** option to establish connection to intermediate SSH server before connecting to a database and forward all <DB_SERVER> commands through the secure tunnel. Set the SSH connection properties in the corresponding boxes: SSH host name, SSH port, SSH user name, and SSH password.

Note: <DB_SERVER> host name at the Connection page should be set relatively to the SSH server in this case. For example, if both of <DB_SERVER> and SSH servers are located on the same computer, you should specify localhost as Host name instead of server's external host name or IP address.

SSH Key file
Specify the location (the secure box) of the **Private key** file on your local machine. Supported Private Key file formats are:

OpenSSH
Putty
SSH.com

Note that you need to trust your local machine not to scrape your passphrase or a copy of your Private key file while it is out of its secure box.

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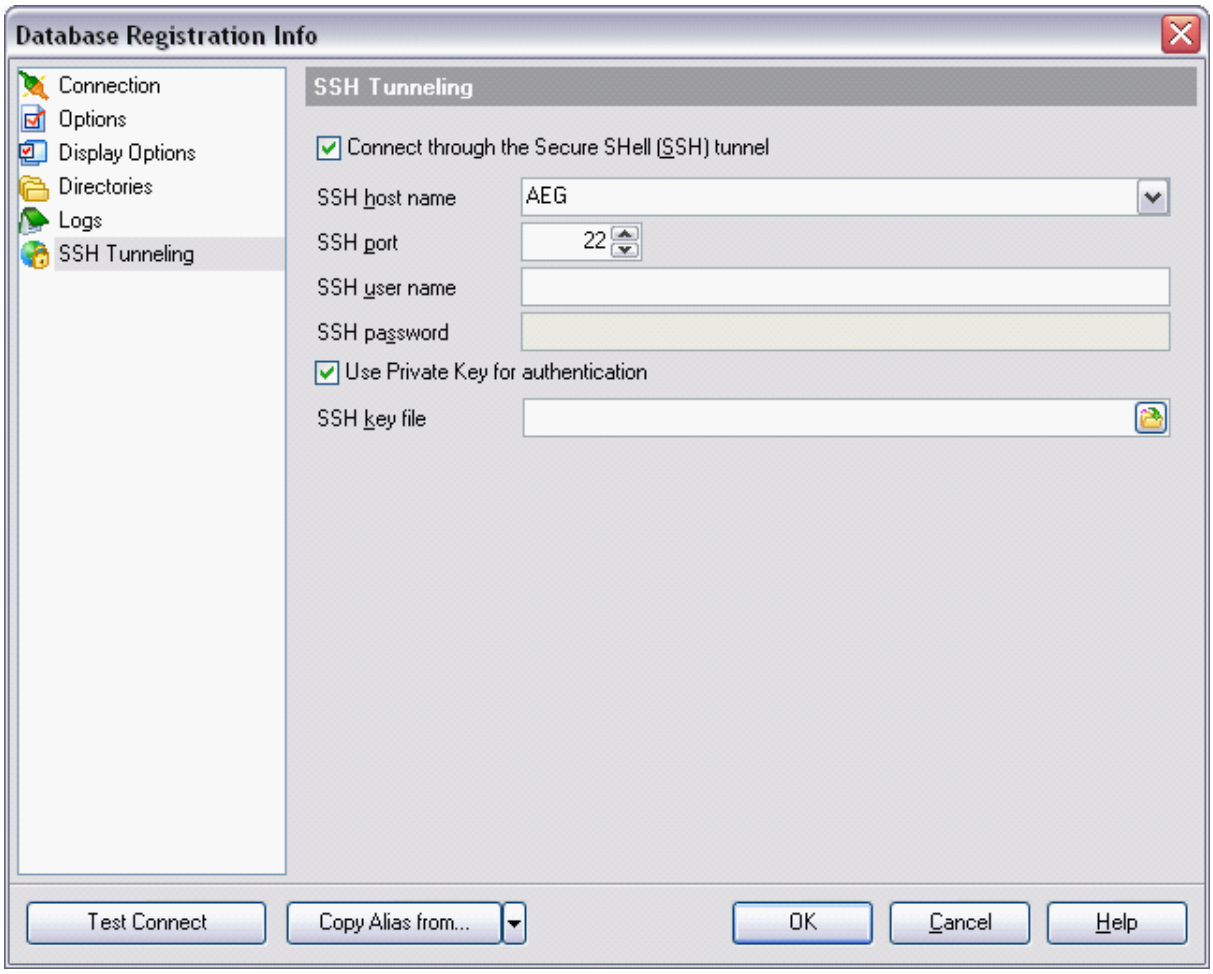

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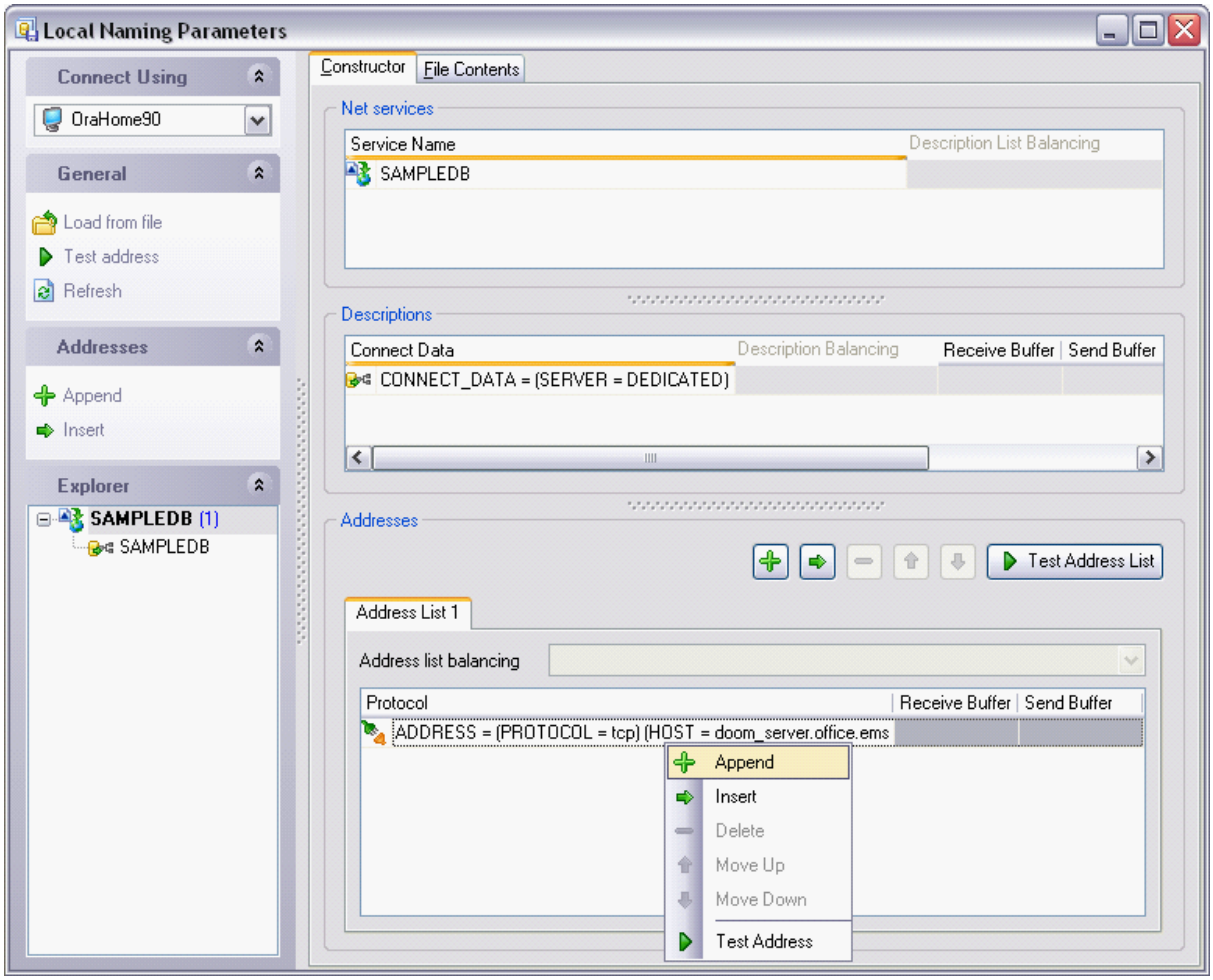
4.3 Editing Local Naming parameters

Local names parameters are gathered in TNS file, which is a configuration file that contains net service names mapped to connect descriptors for the local naming method, or net service names mapped to listener protocol addresses.

To call the TNS File Constructor window right-click on the group/database and select the **Edit Local Naming parameters** item of the context menu.

- Using navigation bar
- TNS File Constructor
- Viewing file contents



4.3.1 Using navigation bar

The navigation bar on the left allows you to:

Object bar:
- Select a database for editing within the current window.

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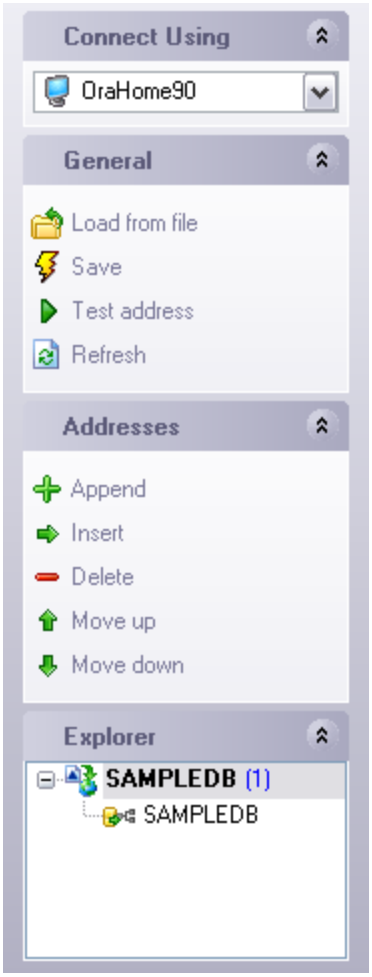
General bar:
- Load contents from an external file
- Save current TNS file contents
- Test a network address selected for service
- Refresh the content of the active tab

Net Services bar:
- Append/insert a service to an existing service list
- Delete a new net service
- Move the service in the list up/down.

The next bar displays various actions according to the current page of **TNS File Constructor**.



4.3.2 TNS File Constructor

Use **TNS File Constructor** to edit the configuration file.

A net service name is an alias mapped to a database network address contained in a connect descriptor. A connect descriptor contains the location of the listener through a

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protocol address and the service name of the database to which to connect. Clients and database servers (that are clients of other database servers) use the net service name when making a connection with an application.

Net services

Service name
A simple name for a service that resolves to a connect descriptor. Use context menu to insert/append/delete a service. You can also test a selected address with the help of the corresponding menu item.

Description List Balancing
Used for client load balancing of multiple listeners. Press on a cell near the **service name** to call the pop-up menu which allows to set the **Balancing options**:

Use Oracle8 and previous compatible syntax
Enables using syntax which complies with the previous Oracle versions when creating TNS file.

Try to connect via each address by turns until success
Correlates with LOAD_BALANCE=OFF.

Try to connect via each address randomly until success
This is by default

Try to connect via one address selected randomly success
Correlates with FAILOVER=OFF.

Use each address for connection by turns until success
Correlates with FAILOVER=OFF, LOAD_BALANCE=OFF, SOURCE_ROUTE=ON.

Use only the first address for connection
Correlates with FAILOVER=OFF, LOAD_BALANCE=OFF.

Descriptions

Connect data
Defines the database to which to connect. Use context menu to insert/append/delete a connection. You can also test a selected address with the help of the corresponding menu item.

Receive buffer / Send buffer
Specify, in bytes, the buffer space for receive/send operations of sessions. This parameter is supported by the TCP/IP, TCP/IP with SSL, and SDP protocols.

SDU
Optimizes the transfer rate of data packets being sent across the network with the session data unit (SDU) size you specify.

Type of Service
Use this parameter to specify the type of service to use for an Oracle Rdb database. This parameter should only be used if the application supports both an Oracle Rdb and Oracle

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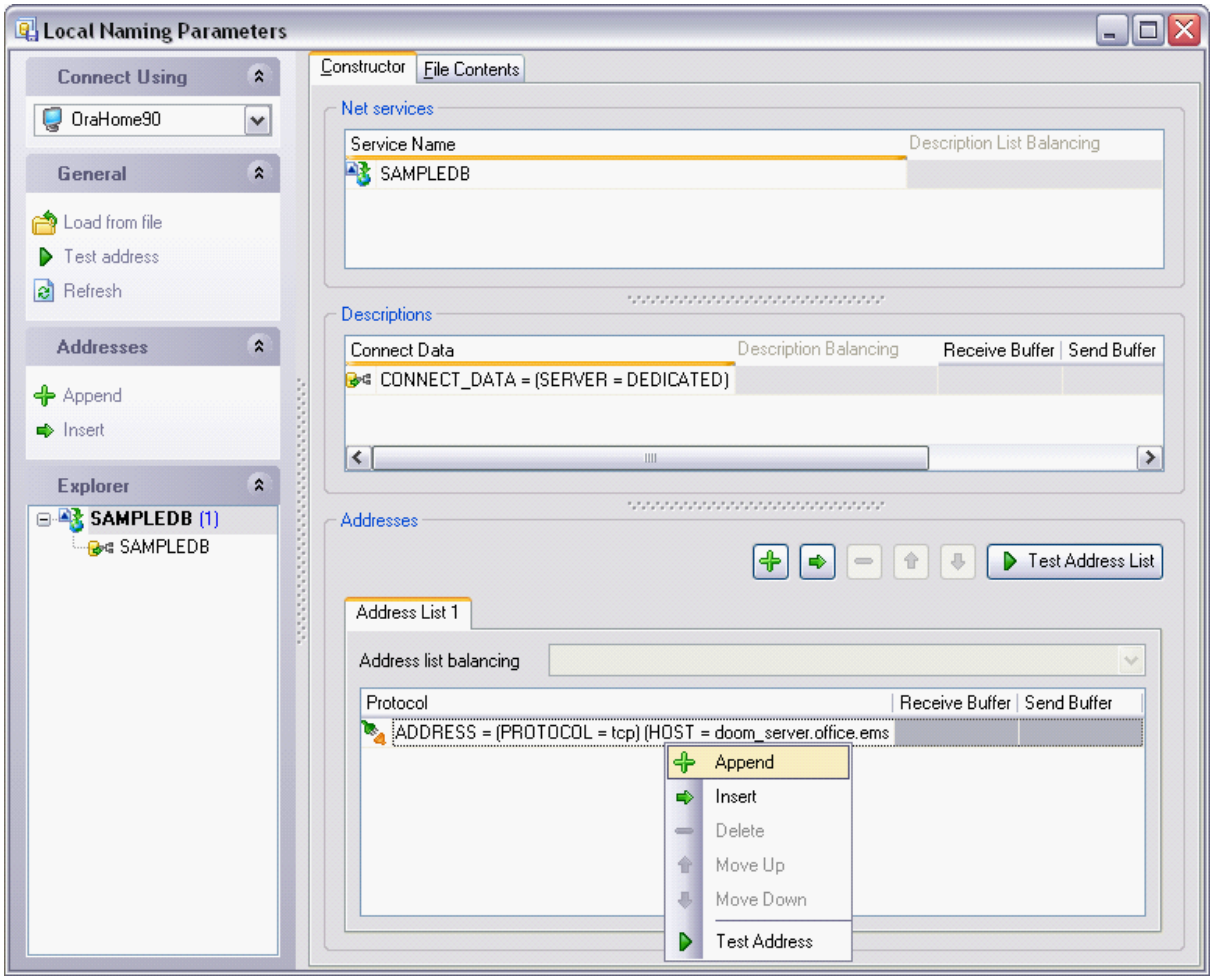
database service, and you want the application to load balance between the two.

Addresses
Define a list of protocol addresses.

Address list
Use corresponding buttons above the group or context menu items to add/insert/delete an address list.
Click on the name of the protocol to call the menu which allows to set protocol options - host, protocol and port.

Then set **Receive buffer / Send buffer** parameters, if needed.

Testing of a selected address can be done with the help of the corresponding menu item or button.



4.3.3 Viewing file contents

At this tab you may see the result TNS file contents. The contents can be saved to file or copied to clipboard.

With the help of the navigation bar you can load an existing TNS file to be edited either

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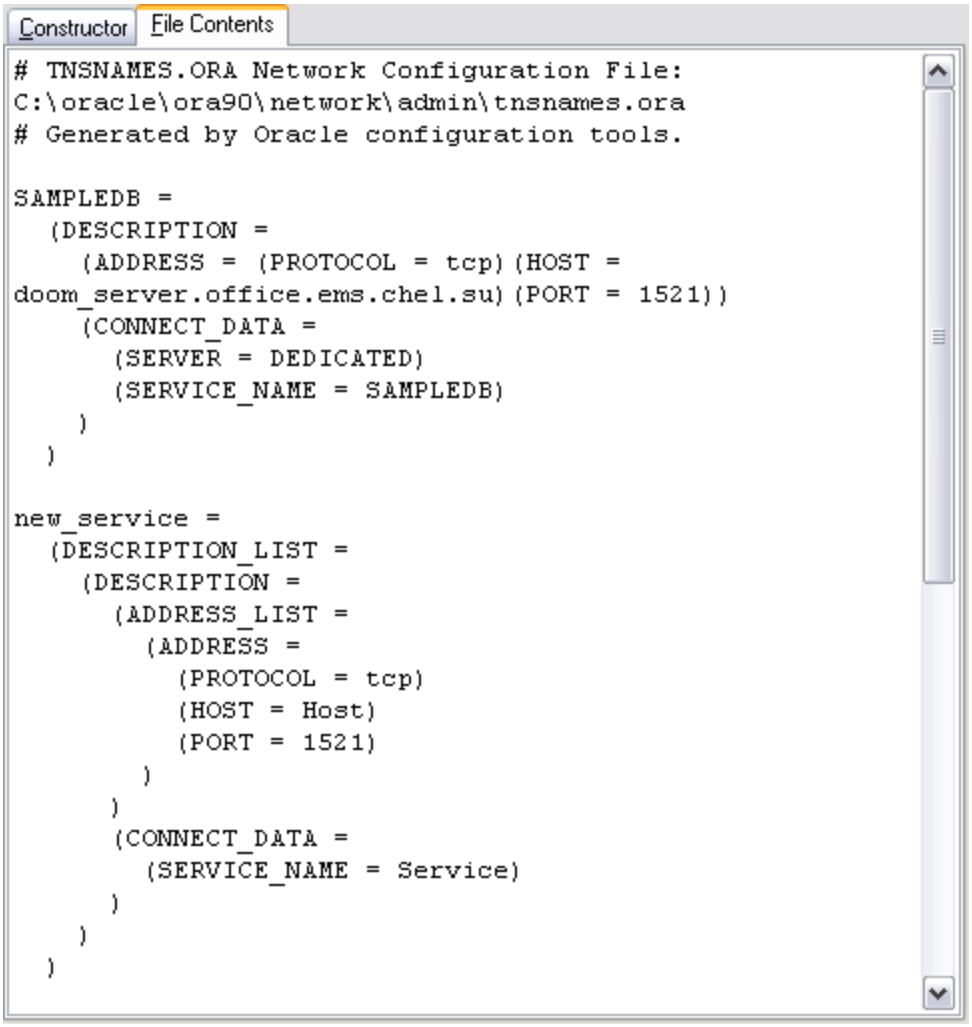
within the **TNS File Constructor** or manually. Connection addresses listed in address list may be tested by selecting the corresponding item of **Navigation bar**.

Editing Local Naming parameters



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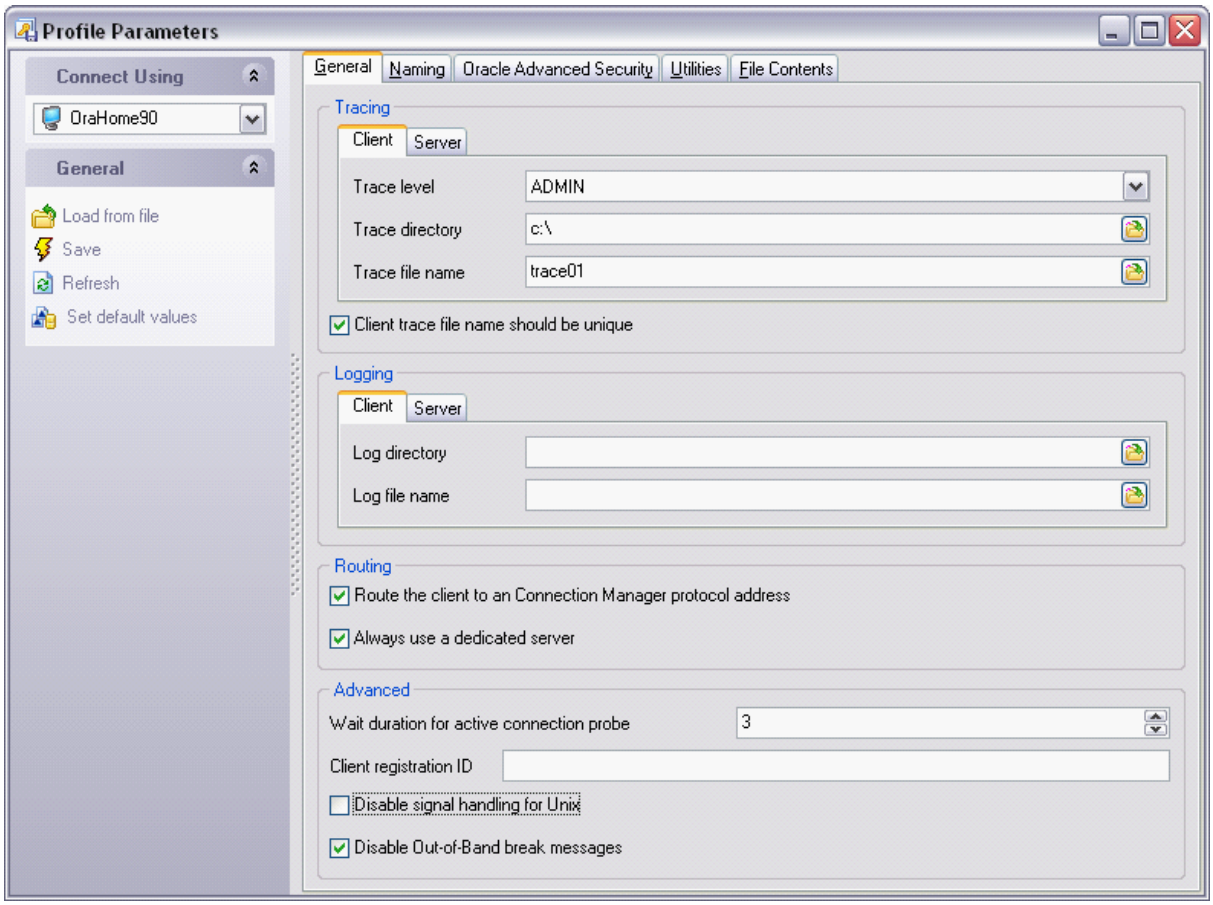
4.4 Editing Profile parameters

Profile Parameter Editor enables you to:

- Specify the client domain to append to unqualified names
- Prioritize naming methods
- Enable logging and tracing features
- Route connections through specific processes
- Configure parameters for external naming
- Configure Oracle Advanced Security
- Use protocol-specific parameters to restrict access to the database

To call the **Profile Parameters** window right-click on the group/database and select the **Edit Profile Parameters** item of the context menu.

- General options
- Naming options
- Oracle Advaced Security
- Configure Utilities
- Viewing file contents



Availability:

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Windows Full	Yes
Windows Lite	Yes

4.4.1 General options

Here you can take a brief look at the general server configuration options.

Tracing

Trace level
Turns tracing on/off, at a specific level. Select client level at the appropriate drop-down box.

Trace directory and **Trace filename**
Specify the name of the trace file and the directory where it should be stored.

Please note that tracing options may be configured for the server as well as for the client. You need to switch to the appropriate tab of the **Tracing** group.

Client trace file name should be unique
Use the option to specify whether or not a unique trace file is created for each client trace session. When the value is set to on, a process identifier is appended to the name of each trace file, enabling several files to coexist.

Logging

Log directory
Specify the destination directory for the client (if the **Client** tab is selected) or DB server (if the **Server** tab is selected) log file.

Log file name
Specify the name of the log file for the client/DB server.

Routing

Route the client to an Connection Manager protocol address
Routes the client to a protocol address for an Oracle Connection Manager.

Always use a dedicated server
Enables connections from this client use a dedicated server process, even if shared server is configured.

Advanced

Wait duration for active connection probe
Use this parameter to specify a the time interval, in minutes, to send a probe to verify that client/server connections are active.

Client registration ID
Set a unique identifier for this client computer. This identifier is passed to the listener with

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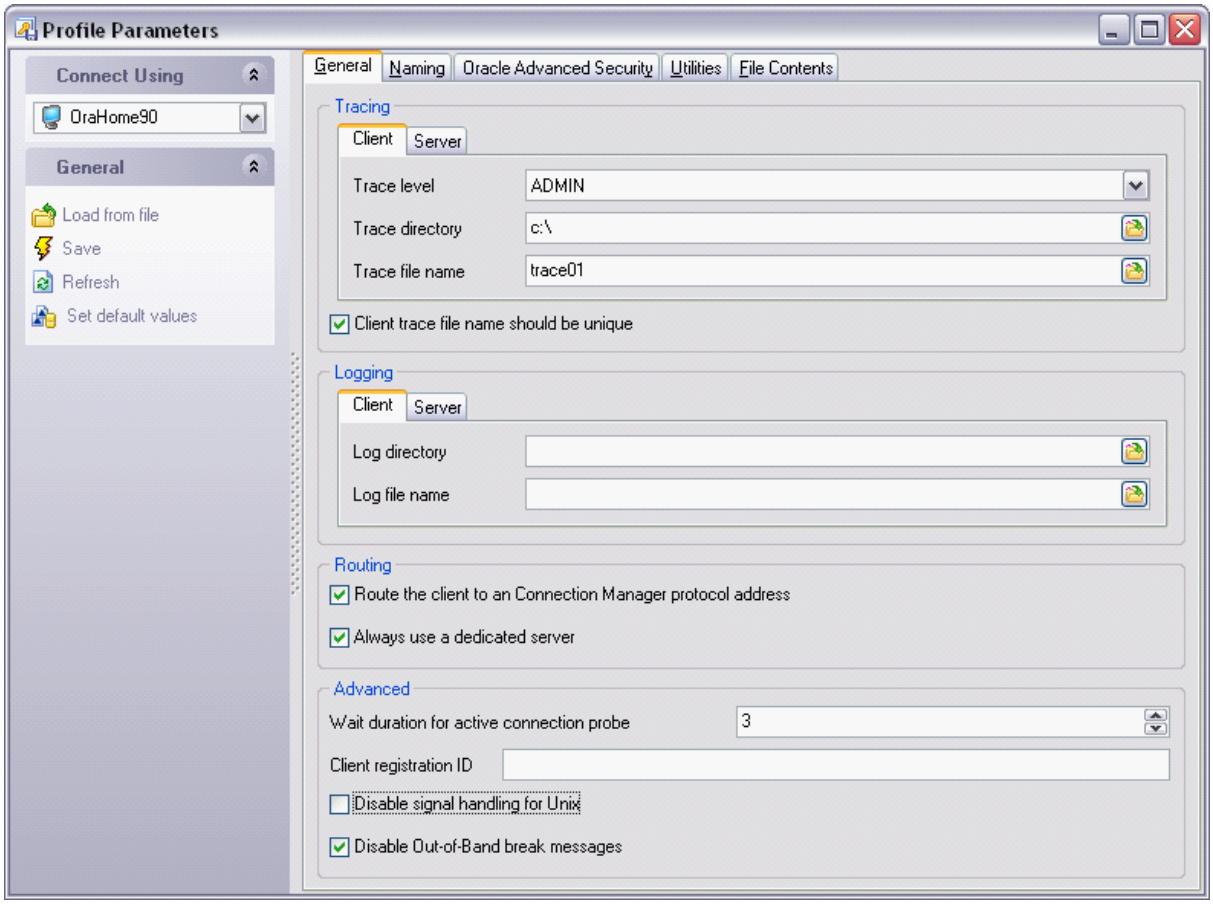
any connection request and is included in the Audit Trail. The identifier can be any alphanumeric string up to 128 characters long.

Disable signal handling for Linux
Use this parameter to turn signal handling on or off for UNIX systems.

Disable Out-of-Band break messages
If turned on, disables the ability to send and receive "break" messages using urgent data provided by the underlying protocol. Once enabled, this feature applies to all protocols used by this client.



4.4.2 Naming options

Methods
The **Selected** list indicates the order of the naming methods, such as TNSNAMES or Oracle Names, that will be used for client name requests.

To include an item from to the **Selected**, move it from the **Available** list to the **Selected** by double-clicking or dragging their names. To remove an item from the list, move it back in the same way. You can also use the arrow buttons to move the selected items (multiple selection can be performed using Ctrl or Shift).

The **Preferred Servers** tab
Indicates the name, addresses, and order of Oracle Names servers that will be used for a

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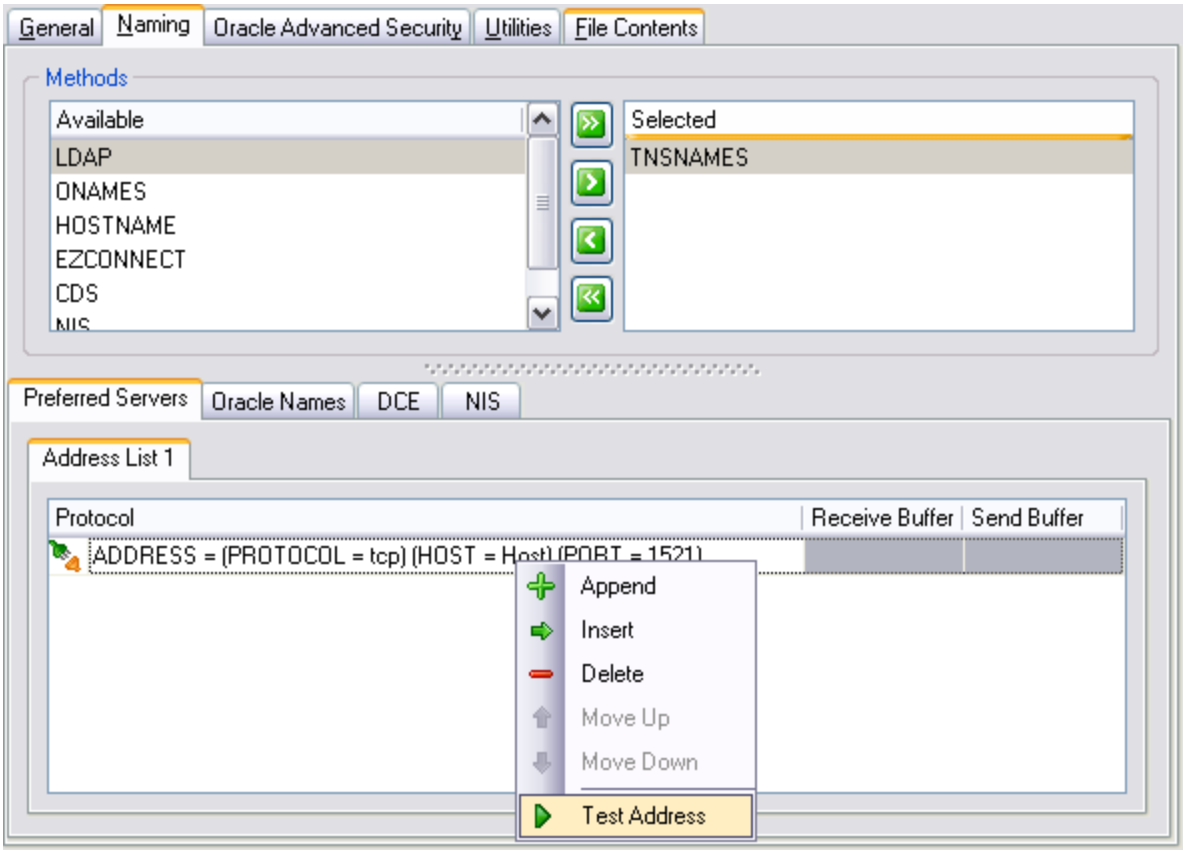
client's name requests.
Use context menu to insert/append/delete a server. You can also test a selected address with the help of the corresponding menu item.



The **Oracle names** tab

Wait duration before disconnection from Names server
Limits the amounts of time the Oracle Names server will wait for the connection from a client to complete.

Default domain
Indicates the domain from which the client most often requests names. When this parameter is set, the default domain name will be automatically appended to any unqualified service name.

Wait duration before connection retry
Determines how long a client will wait for a response from an Oracle Names server before reiterating the request to the next server in the preferred servers list.

Number of retries per each Names server
Specifies the number of times the client should try each server in the list of preferred servers before allowing the operation to fail.

Number of connections to a Names server
Determines how many connections an Oracle Names client may have open at one time.

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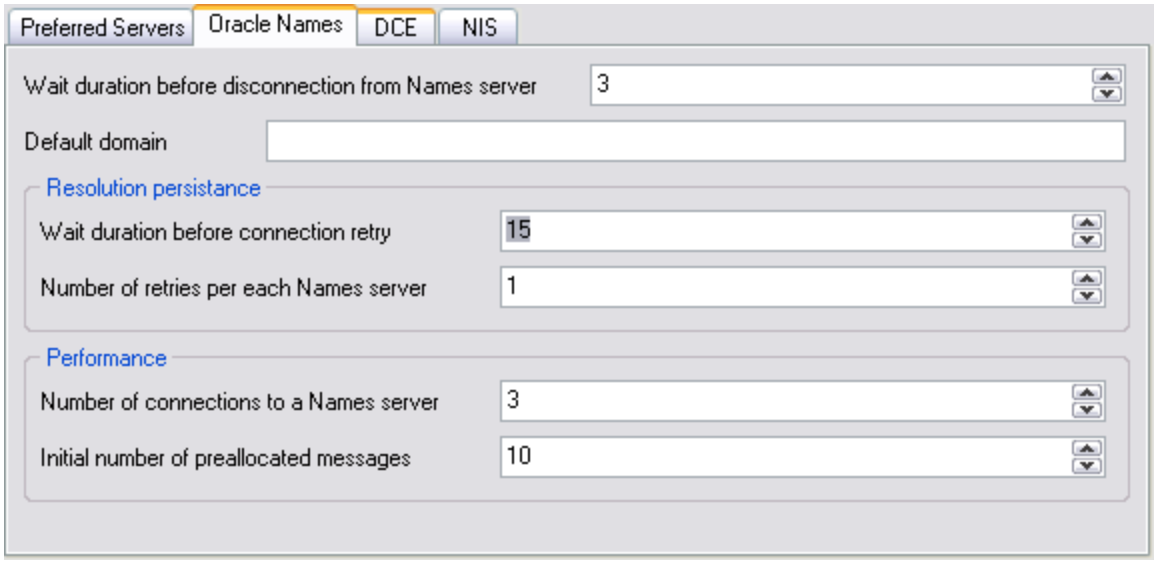
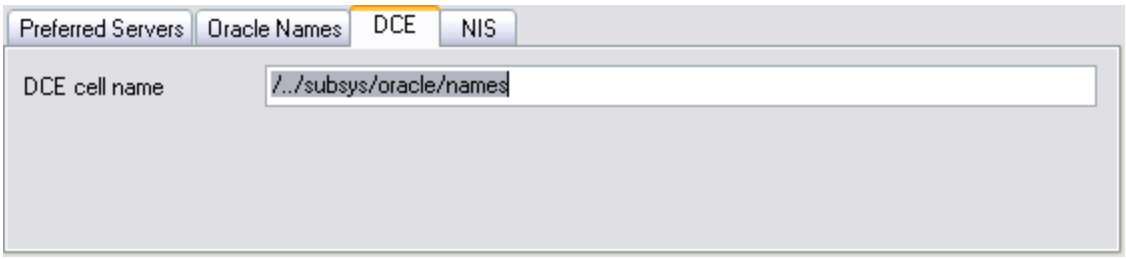
Initial number of preallocated messages
Determines the initial number of messages allocated in the client's message pool which are used for forwarded message requests.



The **DCE** tab

DCE cell name
Specifies the Distributed Computing Environment (DCE) cell name (prefix) to use for name lookup.



The **NIS** tab

NIS map file name
Specifies the file to be used to map Network Information Service (NIS) attributes to an NIS mapname.
NIS is a Sun Microsystems' Yellow Pages (yp) client/server protocol for distributing system configuration data such as user and host names between computers on a network.

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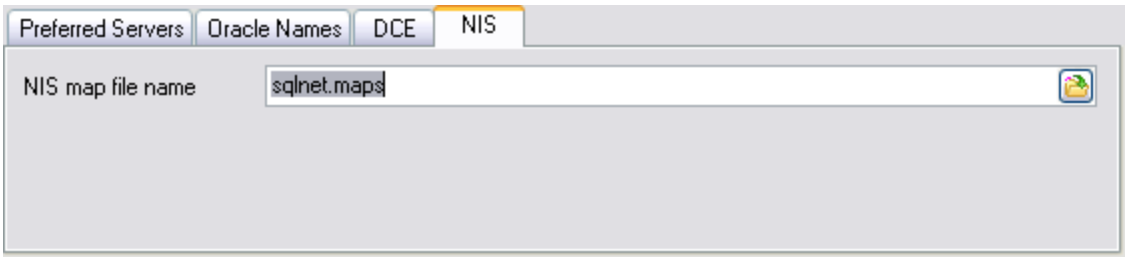
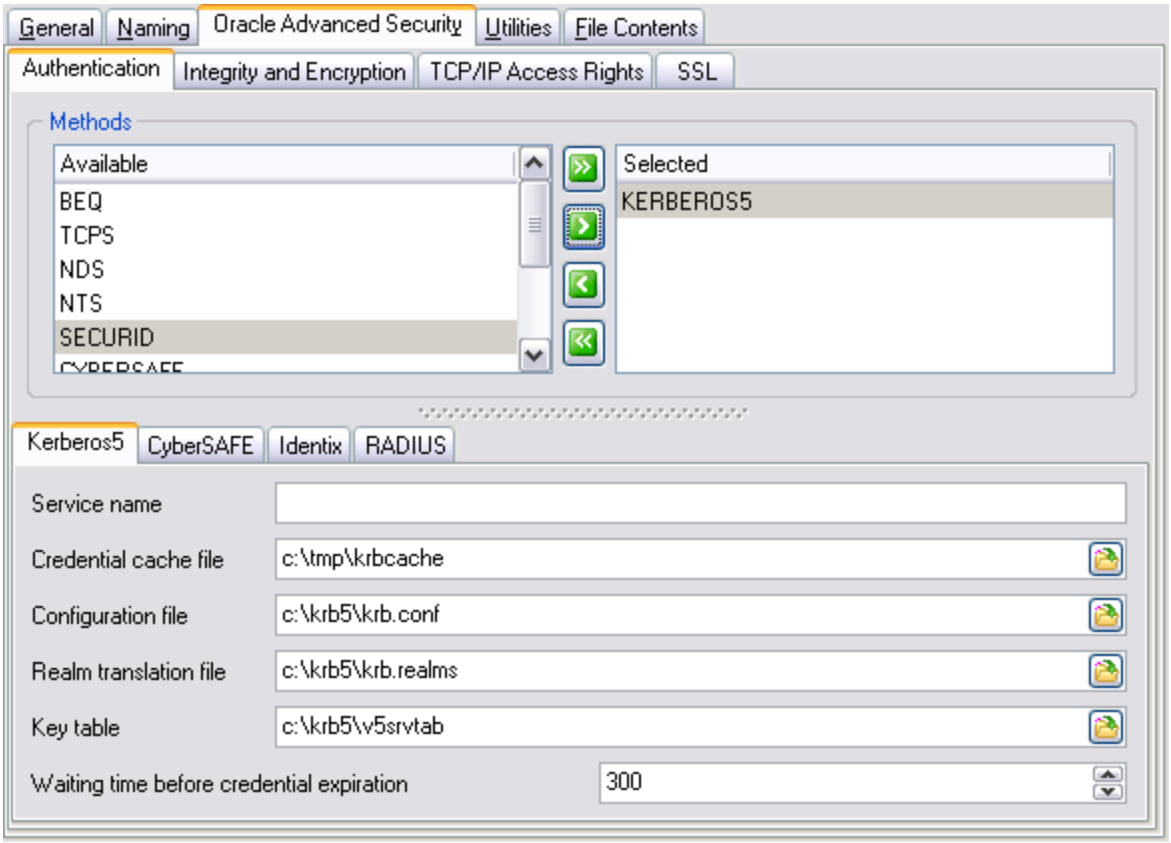


4.4.3 Oracle Advaced Security

4.4.3.1 Authentication

Methods
Enables one or more authentication services. To include an item from to the **Selected**, move it from the **Available** list to the **Selected** by double-clicking or dragging their names. To remove an item from the list, move it back in the same way. You can also use the arrow buttons to move the selected items (multiple selection can be performed using Ctrl or Shift).



The **Kerberos5** tab

Service name
Define the name of the service used to obtain a Kerberos service ticket

Credential cache file
Specifiy the complete path name to the Kerberos credentials cache file.

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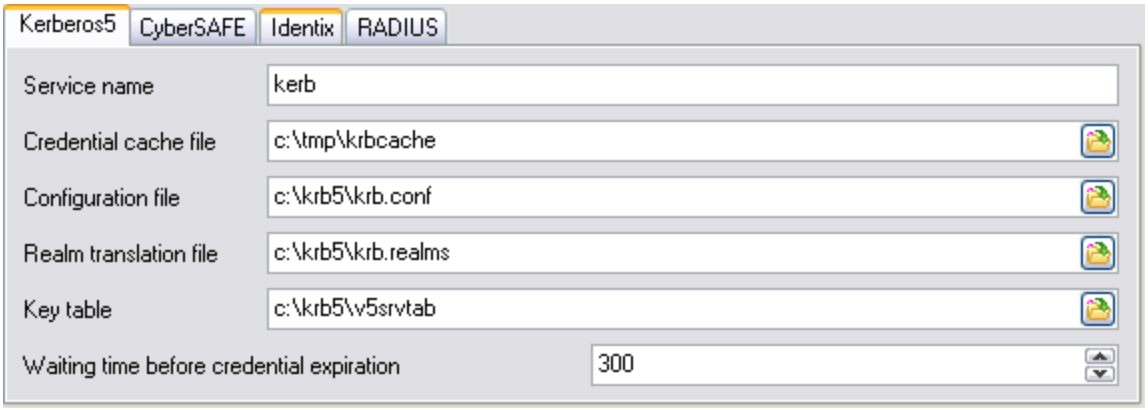
Configuration file
Specify the complete path name to the Kerberos configuration file, which contains the realm for the default KDC and maps realms to KDC hosts.

Realm translation file
Specify the complete pathname to the Kerberos realm translation file, which provides a mapping from a host name or domain name to a realm.

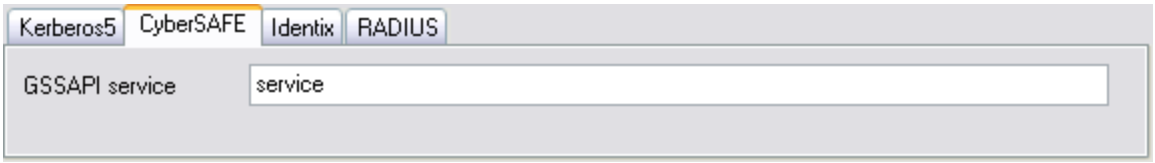
Key table
Specify the complete path name to the Kerberos principal/secret key mapping file, which is used to extract keys and decrypt incoming authentication information.

Waiting time before credential expiration
Specify how many seconds can pass before a Kerberos credential is considered out of date.



The **CyberSAFE** tab

GSSAPI service
Define the CyberSAFE service principal.



The **Identix** tab

Database
Specify the service name or alias for the authentication fingerprint database.

Database user
Specify the well known user name for the fingerprint database.

Database password
Specify the well known password for the fingerprint database.

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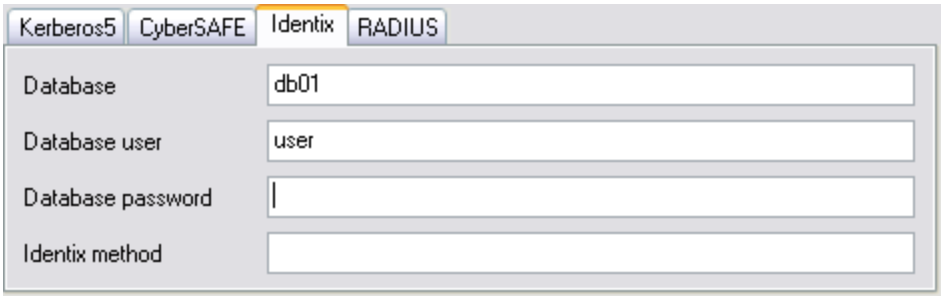
Idenix method
Specify the method name for the fingerprint database. The method name must be ORACLE.



The **RADIUS** tab

Host name
Specifies the location of the primary RADIUS server, either by its host name or IP address.

Port
Listening port of the primary RADIUS server.

Number of connection retries
Times to resend.

Please note that parameters listed above (i.e. host name, port and number of connection retries) may be configured for the primary server as well as for the alternative server. You need to switch to the appropriate tab.

Wait duration before disconnection from server
Time to wait for response.

RADIUS secret key file
Specifies the full path to the file containing the RADIUS shared secret.

Default keyword
This parameter sets the keyword to request a challenge from the RADIUS server. User types no password on the client.

Interface class name
Sets the name of the Java class that contains the graphical user interface when RADIUS is in the challenge-response (asynchronous) mode.

Send accounting
Turns accounting on and off. If you enable accounting, packets will be sent to the active RADIUS server at the listening port plus one. By default, packets are sent to port 1646. You need to turn this feature on only when your RADIUS server supports accounting and you want to keep track of the number of times the user is logging on to the system.

Challenge response
This parameter turns on or turns off the challenge-response, or asynchronous, mode support.

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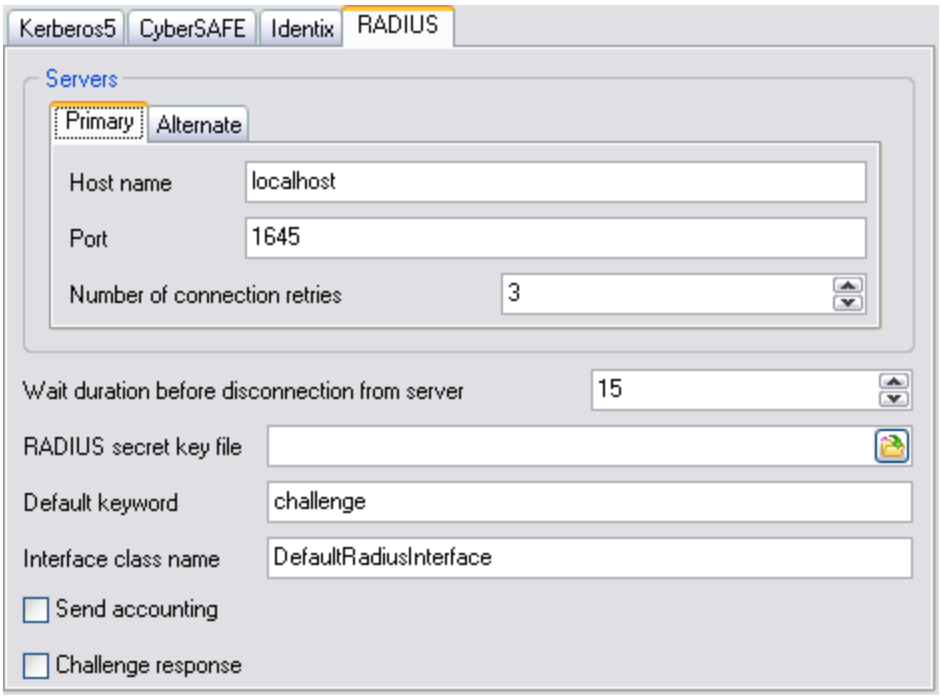

4.4.3.2 Integrity and Encryption

Encryption
Here you determine a list of encryption algorithms used by this client or server acting as a client. This list is used to negotiate a mutually acceptable algorithm with the other end of the connection.

To include an item from to the **Selected**, move it from the **Available** list to the **Selected** by double-clicking or dragging their names. To remove an item from the list, move it back in the same way. You can also use the arrow buttons to move the selected items (multiple selection can be performed using Ctrl or Shift).

Please note that you need to switch to the **Server** tab to form a list of encryption algorithms used by server.

Encryption seed
The characters that form the value for this parameter can be used to seed the random number generator that is used to generate cryptographic key material. The more random the characters entered into this field are, the stronger the keys are.

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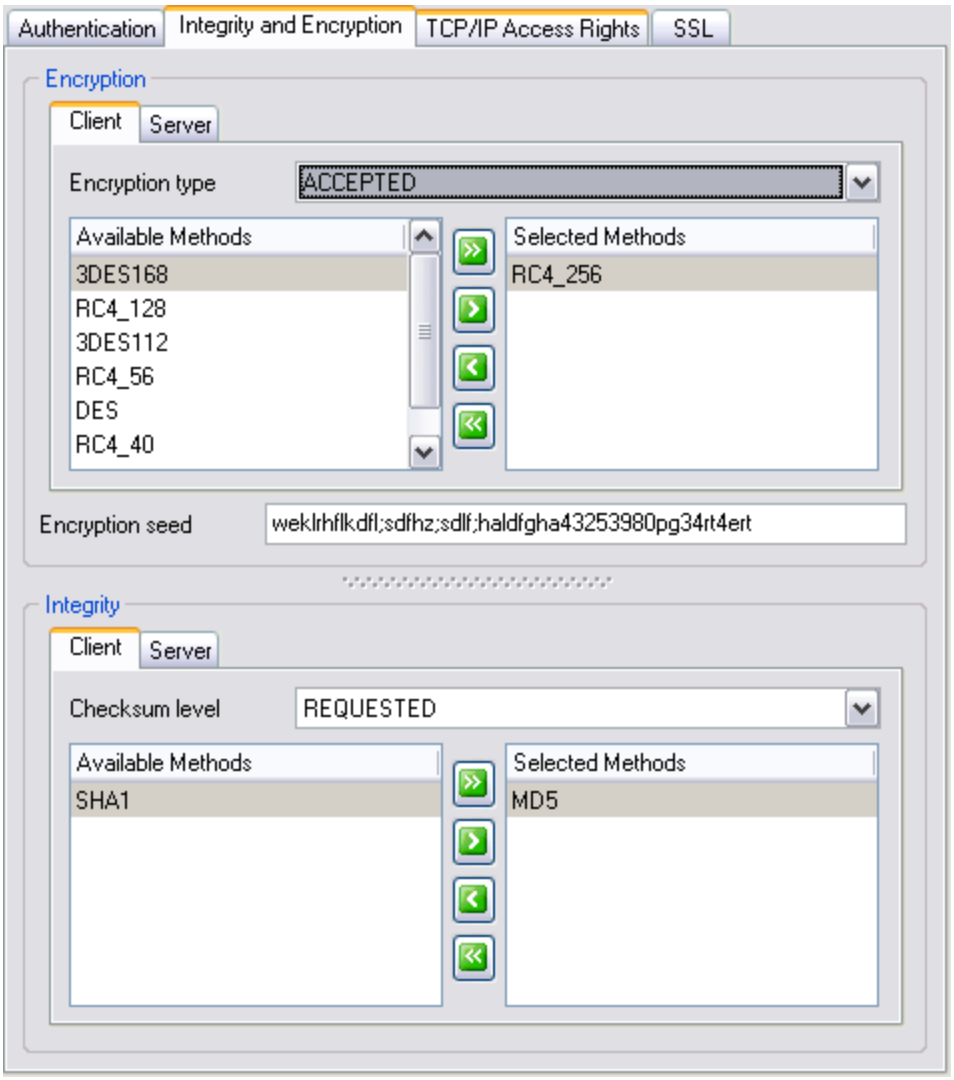

Integrity
This parameter specifies a list of data integrity algorithms this client or server acting as a client uses. This list is used to negotiate a mutually acceptable algorithm with the other end of the connection.

To include an item from to the **Selected**, move it from the **Available** list to the **Selected** by double-clicking or dragging their names. To remove an item from the list, move it back in the same way. You can also use the arrow buttons to move the selected items (multiple selection can be performed using Ctrl or Shift).

Checksum level
This parameter specifies the desired data integrity behavior when a client or another server acting as a client connects to this server.

Please note that you need to switch to the **Server** tab to form a list of integrity algorithms used by server.

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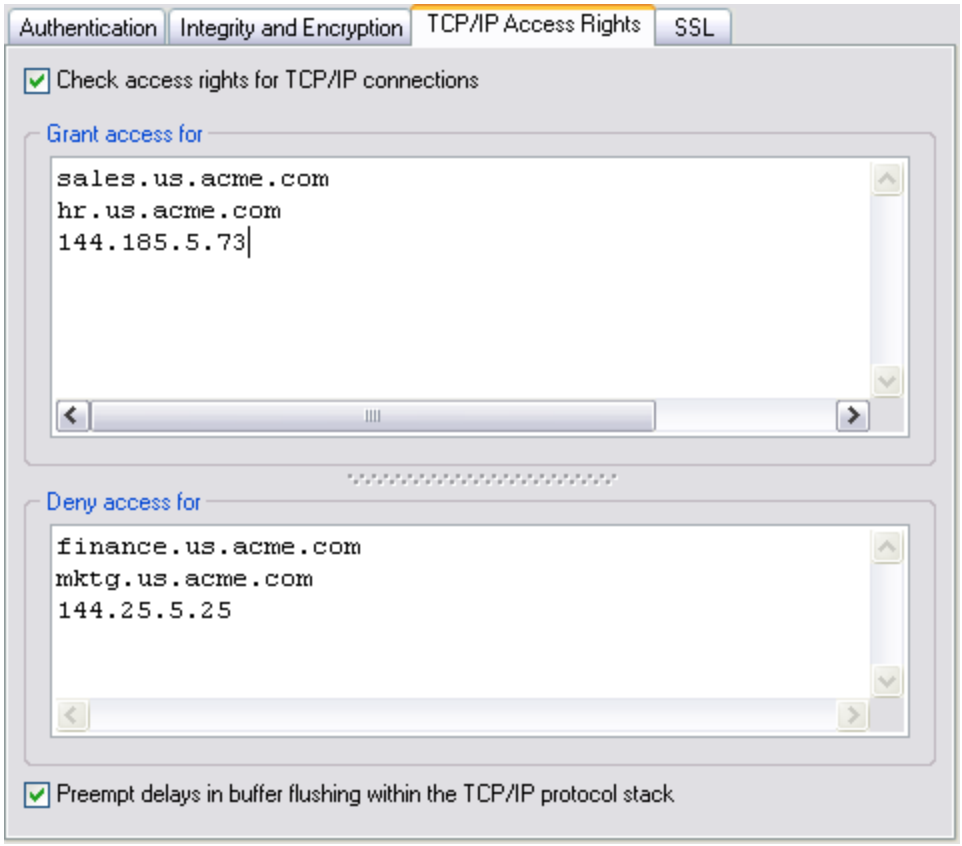
4.4.3.3 TCP/IP Access Rights

Use the **Check access rights for TCP/IP connections** option to determine which clients to allow or deny access.

Grant access for
Specify which clients are allowed access to the database. This list takes precedence over the **Deny access for** list if both lists are present.

Deny access for
Specify which clients are denied access to the database.

You can select to preempt delays in buffer flushing within the TCP/IP protocol stack by enabling the corresponding option.



4.4.3.4 SSL

Wallet configuration
Specify the location of wallets. Wallets are certificates, keys, and trustpoints processed by SSL.

Method
Specify the type of storage.

Directory
Specify the location of Oracle wallets on file system.

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Certificate revocation checking

Method
Configure a revocation check for a certificate.

CRL file / CRL path
Specify the destination directory and the name of the file where you can assemble the CRL of CAs for client authentication.

Cipher suite configuration
Use this group to control what combination of encryption and data integrity is used by the Secure Sockets Layer (SSL).

To include an item from to the **Selected**, move it from the **Available** list to the **Selected** by double-clicking or dragging their names. To remove an item from the list, move it back in the same way. You can also use the arrow buttons to move the selected items (multiple selection can be performed using Ctrl or Shift).

Require client SSL authetication
Use this option to force the version of the SSL connection. Clients and database servers must use a compatible version.

Require server X.509 name match
Use the option to enforce that the distinguished name (DN) for the database server matches its service name. If you enforce the match verifications, then SSL ensures that the certificate is from the server. If you select to not enforce the match verification, then SSL performs the check but allows the connection, regardless if there is a match. Not enforcing the match allows the server to potentially fake its identify.

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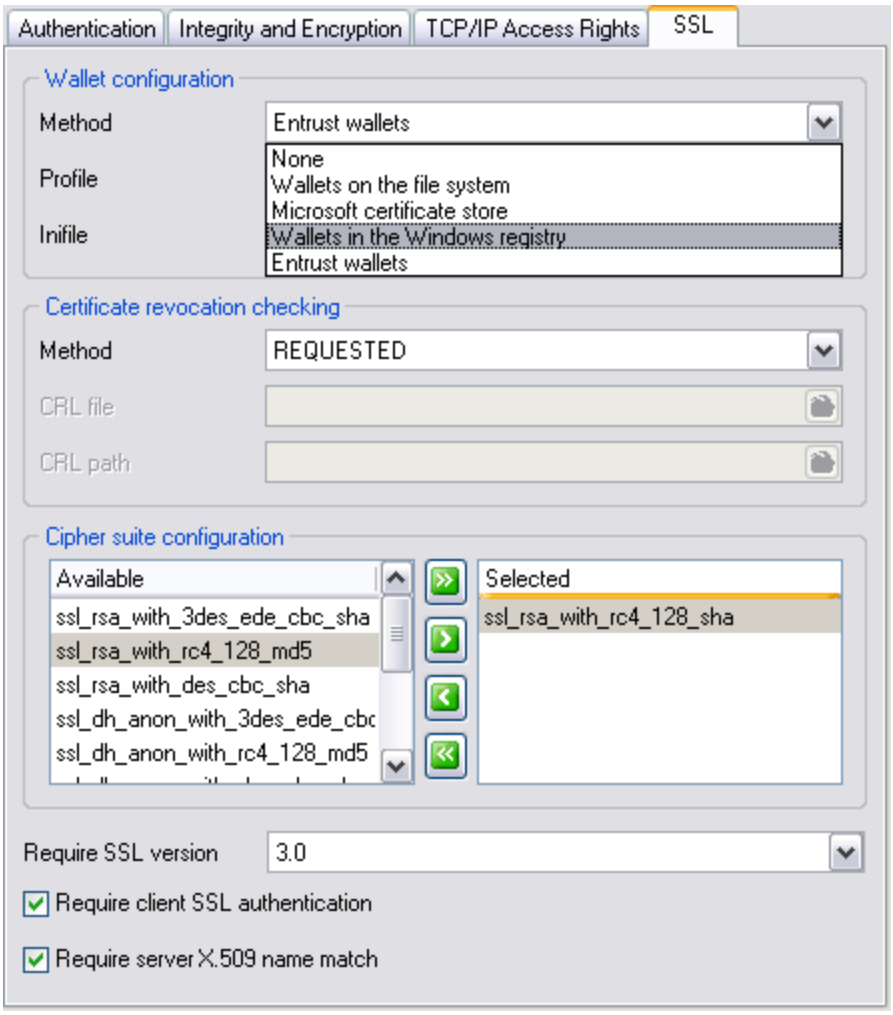

4.4.4 Configure Utilities

Oracle Enterprise Manager Daemon

Trace level
Turn tracing on or off. Set a specific level of tracing for the Oracle Enterprise Manager daemon.

Trace directory
Specify the destination directory of the Oracle Enterprise Manager daemon trace file.

Trace mask
With this field you can specify that only the Oracle Enterprise Manager daemon trace entries are logged into the trace file.

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Oracle Names Control utility

Server password
Use the parameter NAMESCTL.SERVER_PASSWORD to indicate the value that matches the configured password set in the names.ora file with the NAMES.PASSWORD parameter.

Encrypt password internally
If checked the password is sent to the Oracle Names server encrypted.

Enable a set of internal undocumented commands
The option enables/disables a set of internal undocumented commands.

Suppress any connection error messages
If checked, any error messages are suppressed when the client is unable to connect to a default Oracle Names server.

Run sensitive commands without confirmation
Use this option to indicate whether sensitive commands should be prompted with a confirmation when running the Oracle Names Control utility.

Trace level
Set a specific level of tracing for the Oracle Names Control utility.

Trace directory
Specify the directory where trace output from the Oracle Names Control utility is placed.

Trace file
Specify the file in which the Oracle Names Control utility trace output is placed.

Trace file name should be unique
Indicates whether or not a process identifier is appended to the name of each trace file generated. If this option is enabled, several trace files can co-exist.

TNSPing utility

Trace level
Turn tracing on/off. If set to on, sets a specific level of tracing for the TNSPing utility.

Trace directory
Specify the destination directory for the TNSPing utility trace file.

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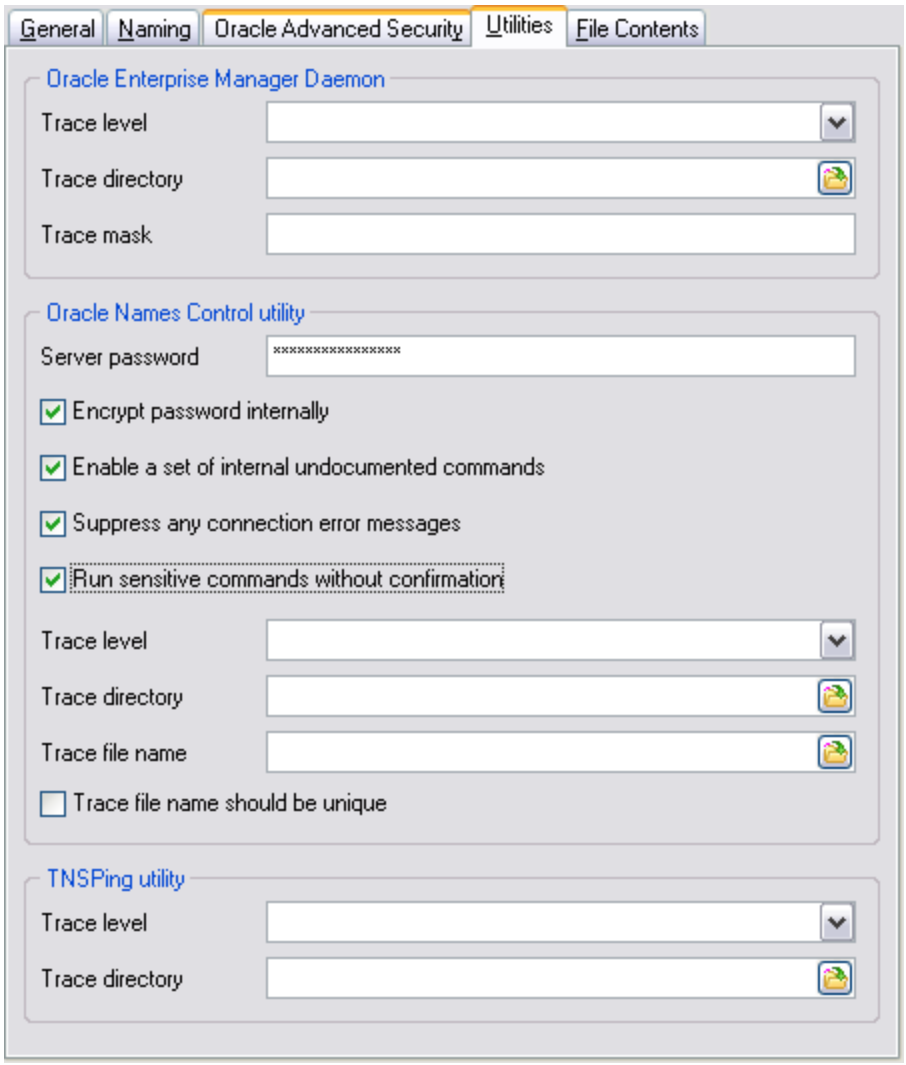

4.4.5 Viewing file contents

At this tab you may see the result SQLNET.ORA Network Configuration file contents. The contents can be saved to file or copied to clipboard.

With the help of the navigation bar you can load an existing TNS file to be edited either

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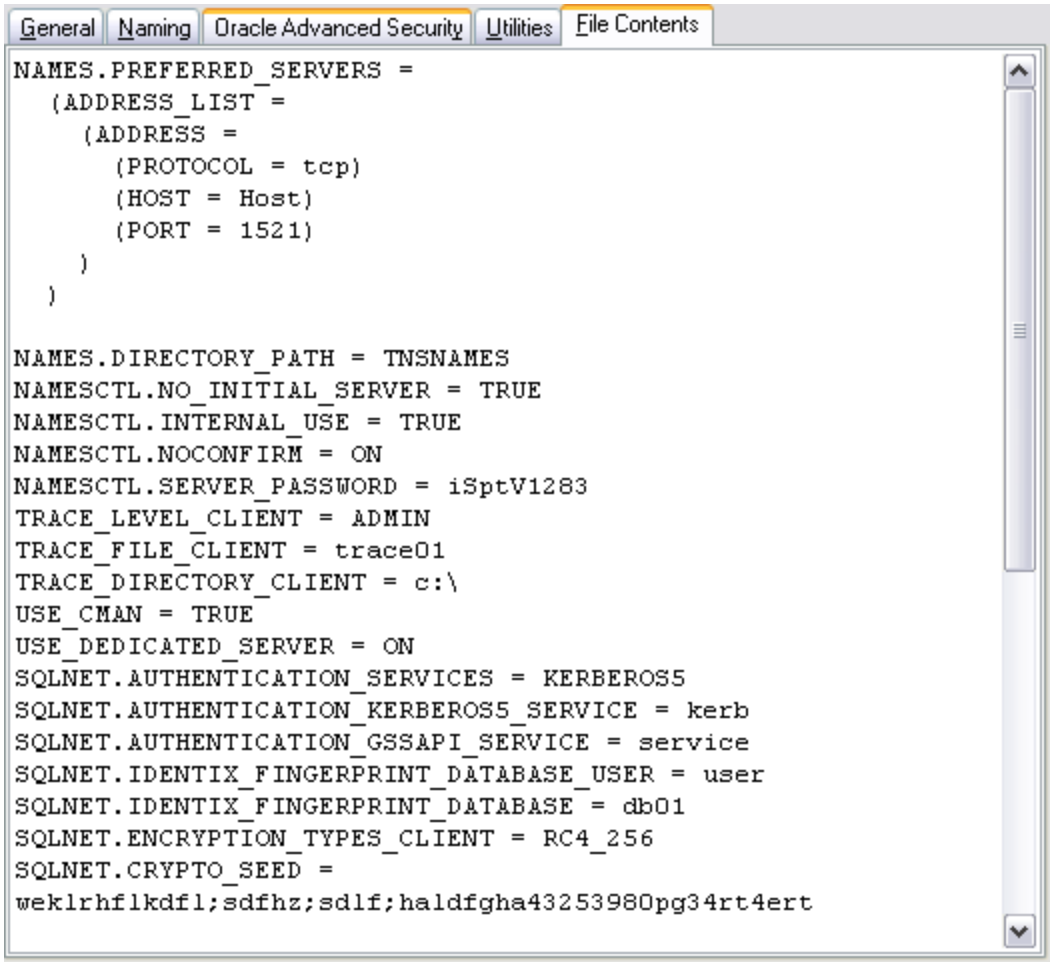
within the **Profile Parameter Editor** or manually.



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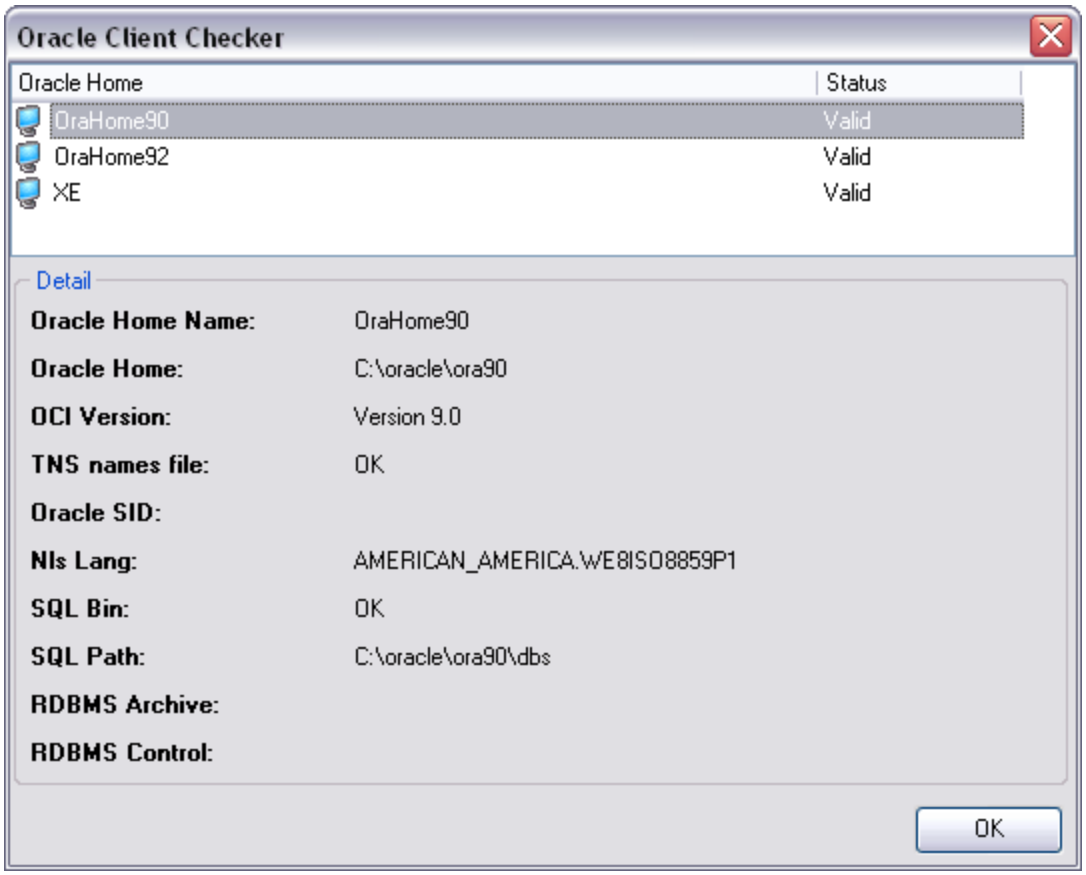
4.5 Oracle client checker

The **Oracle client checker** dialog allows you to check the validity of Oracle client. It also provide common information on client settings.

The **Oracle client checker** dialog is called by pressing the appropriate button at the Register Database Wizard (also available at the Database Registration Info dialog).



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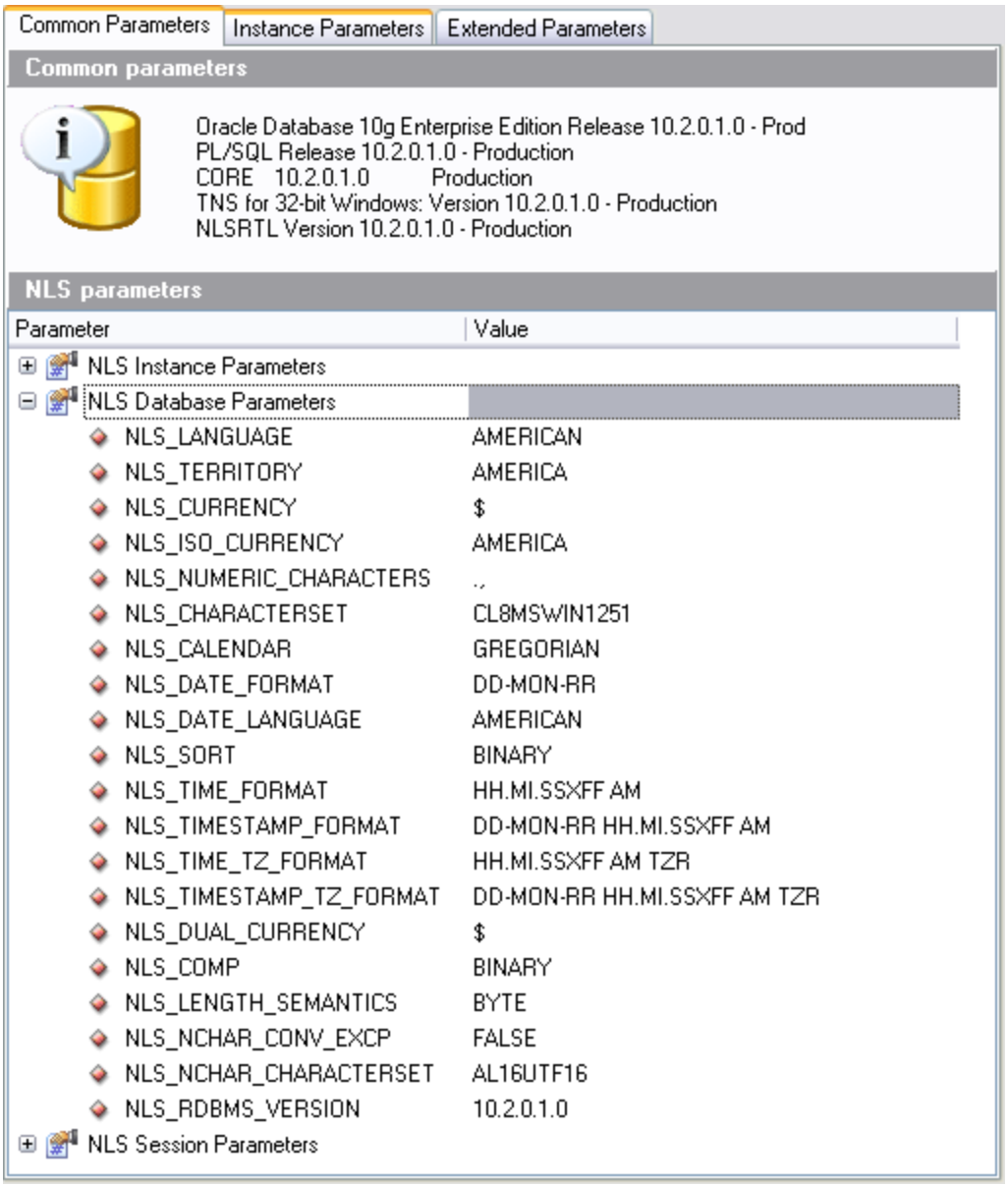
4.6 Database Information

The **Database information** form allows you to get all information on NLS parameters for the database as well as configuration parameters for current instance and current session which can be changed to optimize server performance.

To call the dialog please choose desired database in the DB Explorer tree and then select the **Database Information** menu item from context menu. Another way is selecting the appropriate item from **View** section of the program main menu.

Common Parameters
Instance Parameters
Extended Parameters



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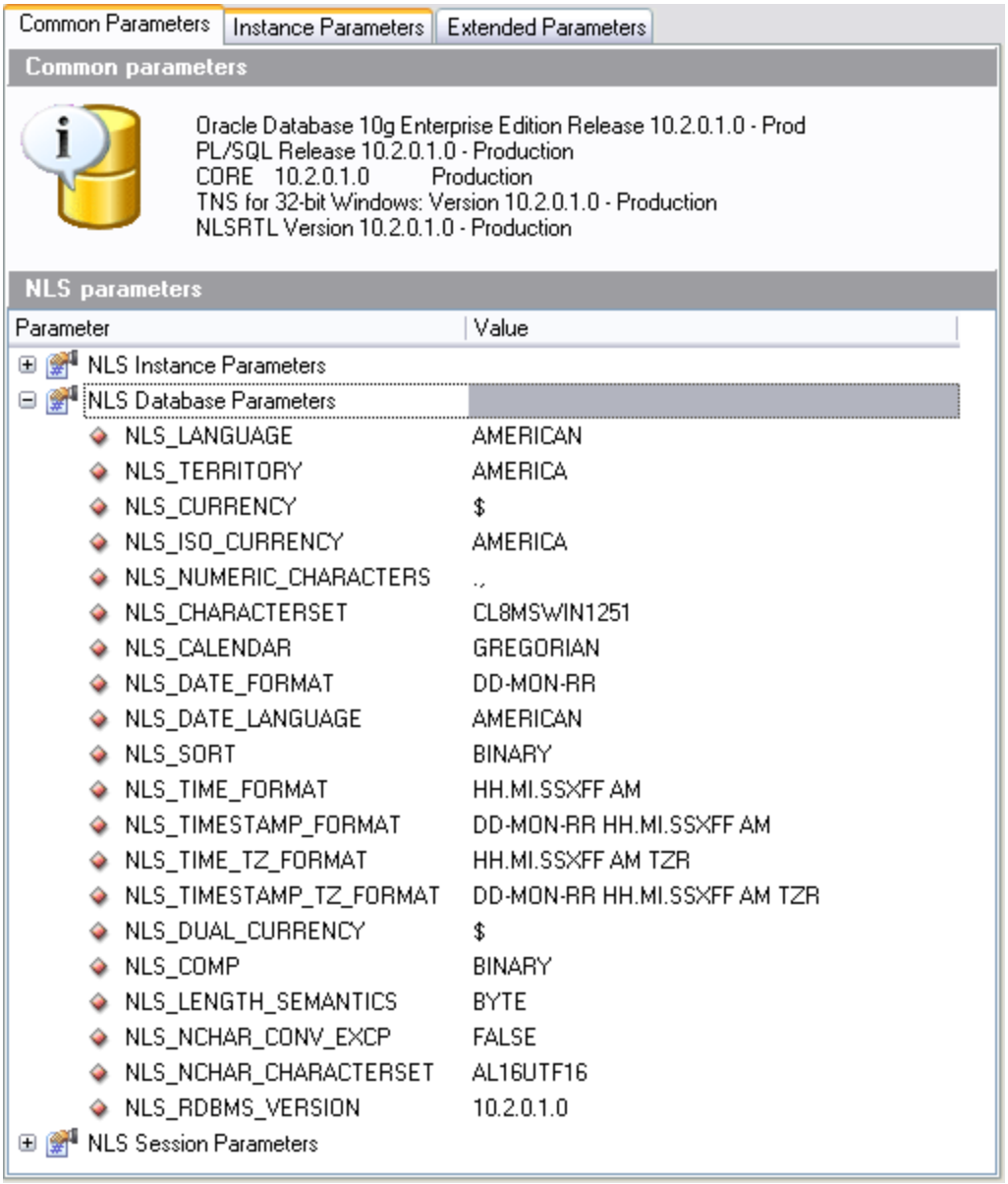
4.6.1 Common Parameters

The NLS database environment is established on creating a database and partially via initialization parameter file at instance startup. At this tab you can obtain all information on database common parameters, as well as NLS instance and session parameters.

The parameters listed at this tab re read-only and cannot be changed.

At the top of the form there is a block displaying all necessary information on the server an all its components and their versions.



4.6.2 Instance Parameters

At this tab you can view and edit instance configuration parameters thus tuning its performance.

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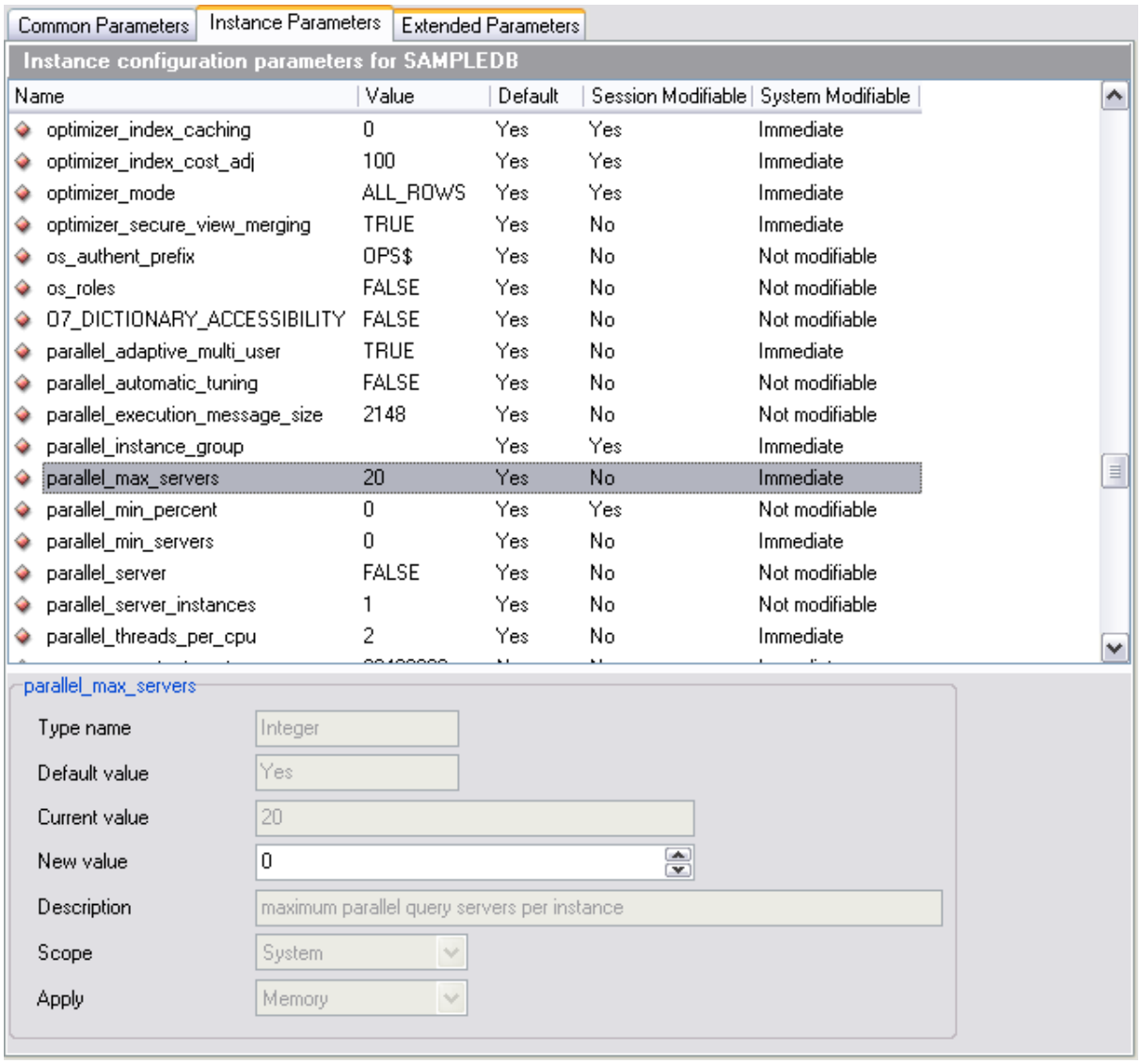
At the bottom of the form you can see the Parameter editor which displays detailed information on the parameter selected. Some parameter values can be changed at the corresponding editor fields (you can recognize them by values at the Session/System Modifiable columns).



4.6.3 Extended Parameters

At this tab there are extended database parameters collected, such as database startup time, date of creation, database role, information on current locks, database cache, pool size, etc. All the parameters are read-only.

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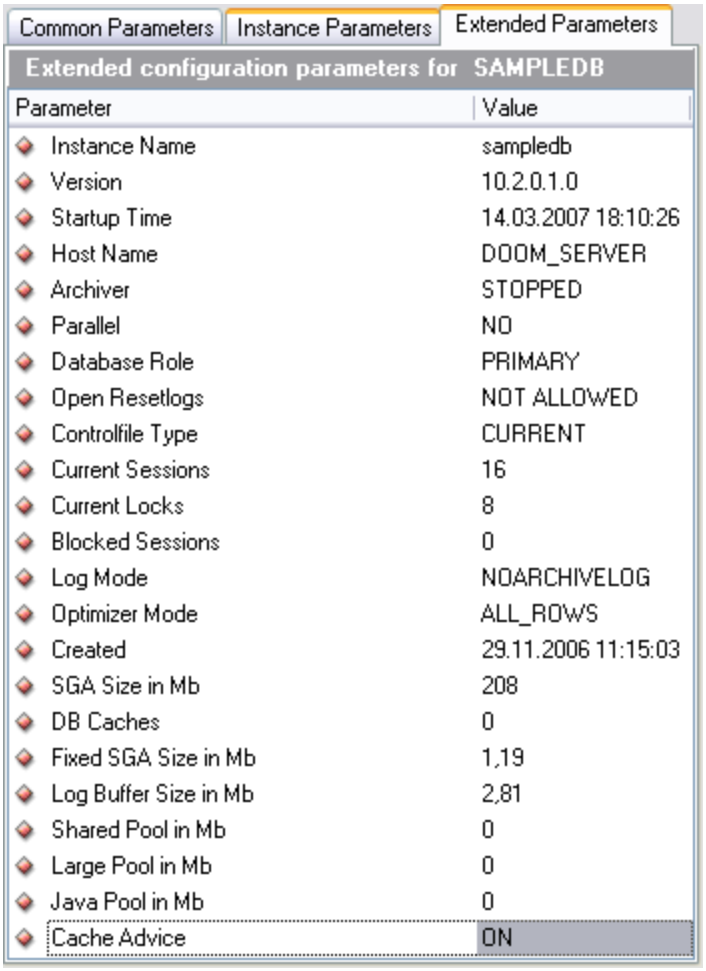

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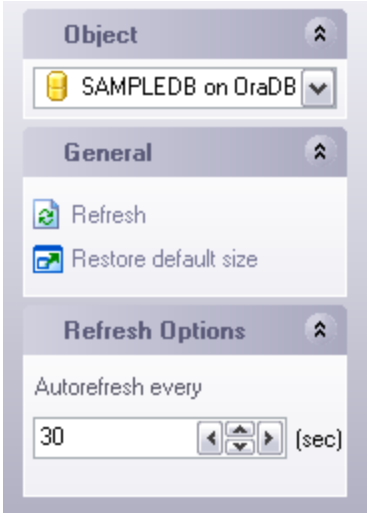
4.7 Database Statistics

The **Database Statistics** form provides all essential statistics on the database selected - system statistics, statistics on sessions (including hit ratio, information on locks and processes); statistics on storage, wait events, latches, etc.

To call the **Database Statistics** form you need to choose desired database in the DB Explorer tree and then select the **Database Statistics** menu item from context menu. Another way is selecting the appropriate item from **View** section of the program main menu.

The navigation bar at the left (Refresh Options section) allows you to set the time of refreshing the statistics information.

System Statistics
Last Analyze Stats
Sessions
Storage
SGA
Wait Events
Latches



4.7.1 System Statistics

This tab of the dialog allows to view database statistics; all stats are grouped into classes - User, Redo, Enqueue, RAC (Real Application Clusters), SQL, Debug, etc.

With the help of the **Class** button on a top grey header you can filter the class of statistics displayed.

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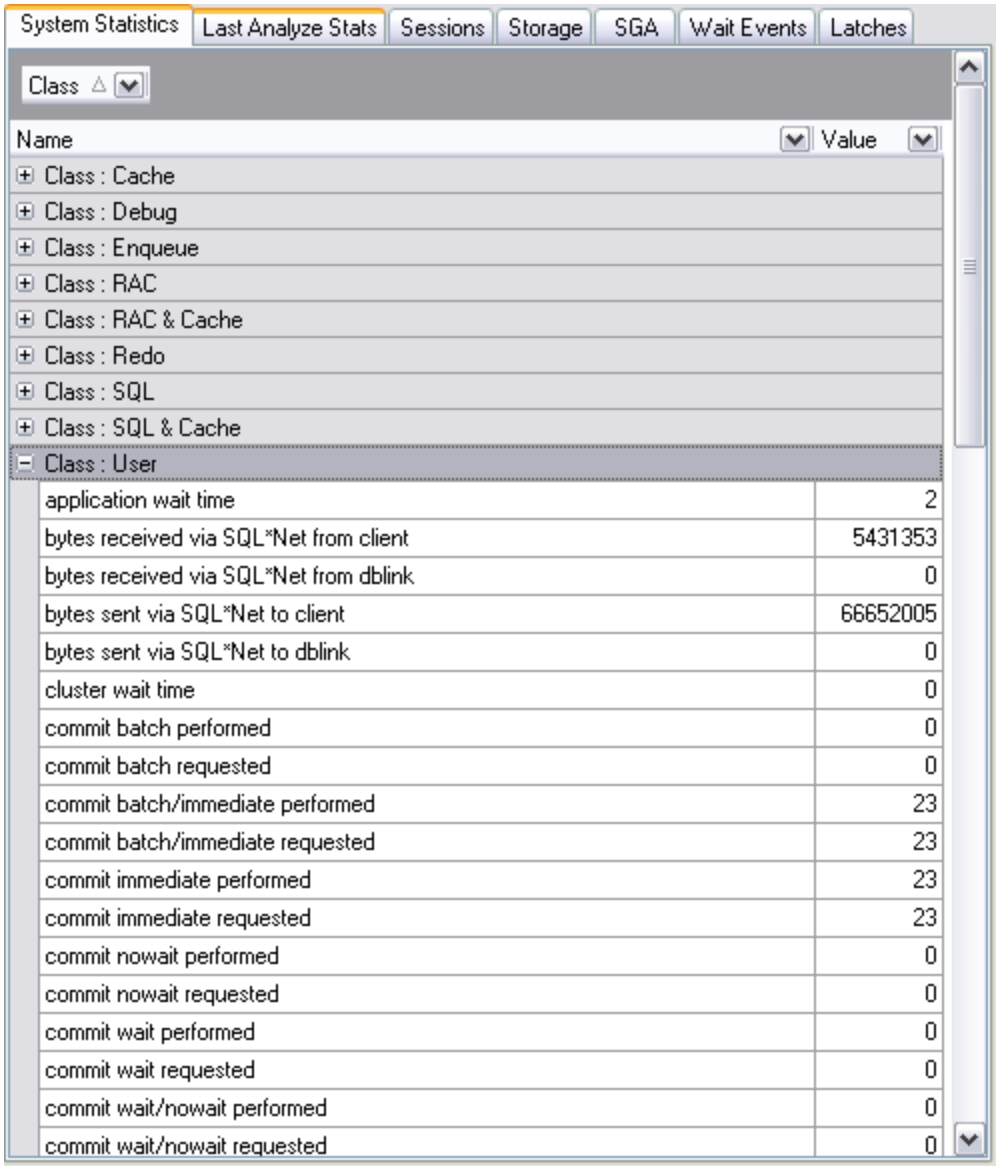

4.7.2 Last Analyze Stats

A this tab you can see date and time of the last statistics gathered on tables and indices. You can select tables/indices to gather statistics for them with the help of respective context menu item opened in the DB Explorer tree. (to select all the tables and indices you can choose the whole schema as well).

With the help of the **Object Type** button on a top grey header you can filter the object type for statistics to be displayed.

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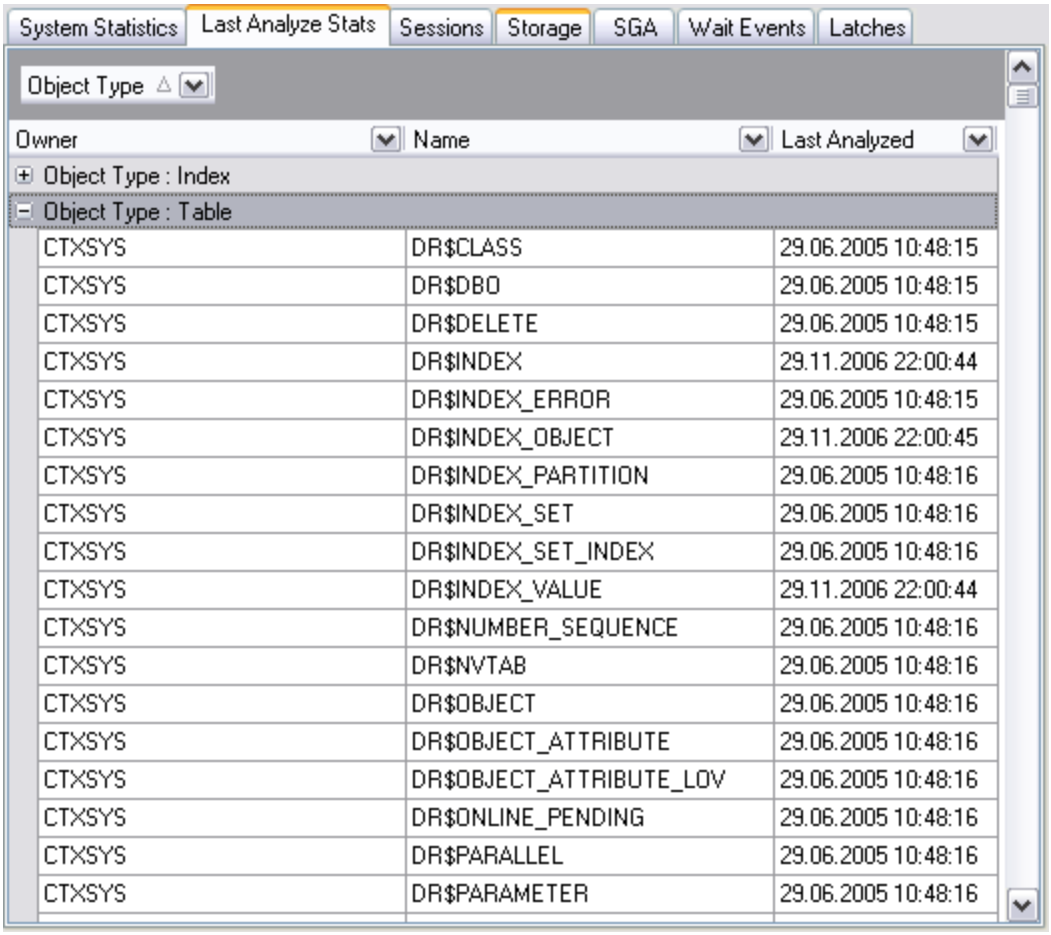

4.7.3 Sessions

At the **Sessions** tab of the **Database Statistics** form you can find all necessary information on current sessions at desired database; it provides information on hit ratio, processes and locks.

The grid at the top of the frame lists all the sessions opened to selected database (The most I/O active sessions are coloured red) and their parameters - SID, status, type information on CPU time and UGA memory.

With the help of respective items of the navigation bar allows you to kill or disconnect session selected.

At the lower part of the frame the information on hit ratio, processes and locks is displayed.

Hit Ratio
Process
Locks

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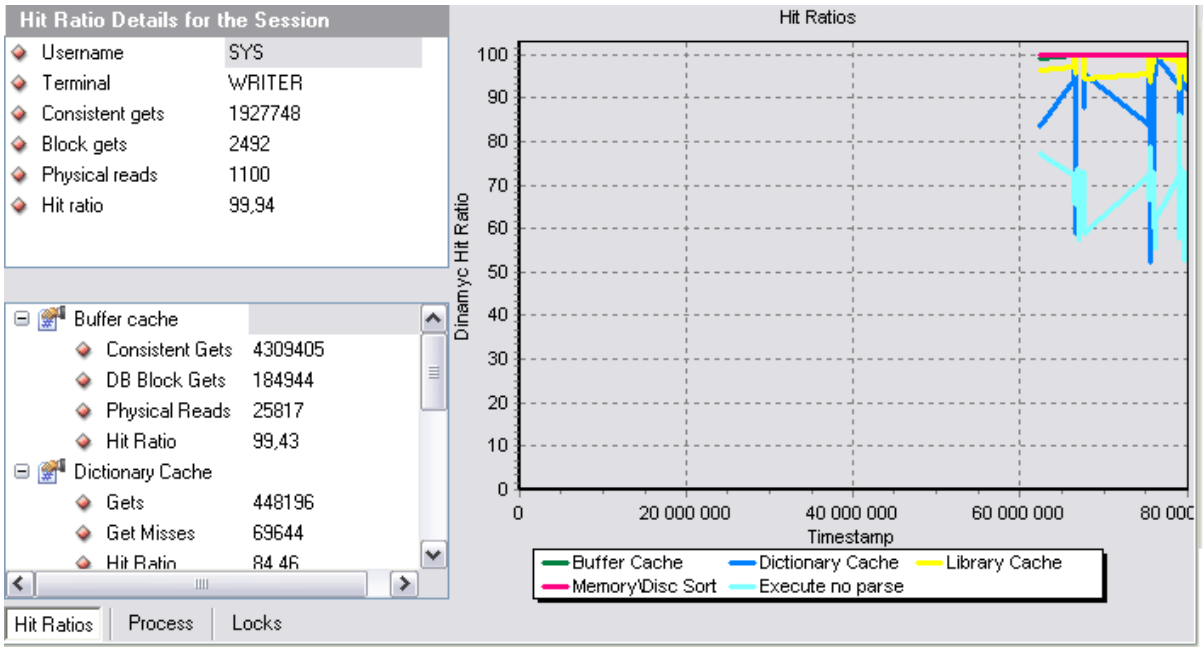
4.7.3.1 Hit Ratio

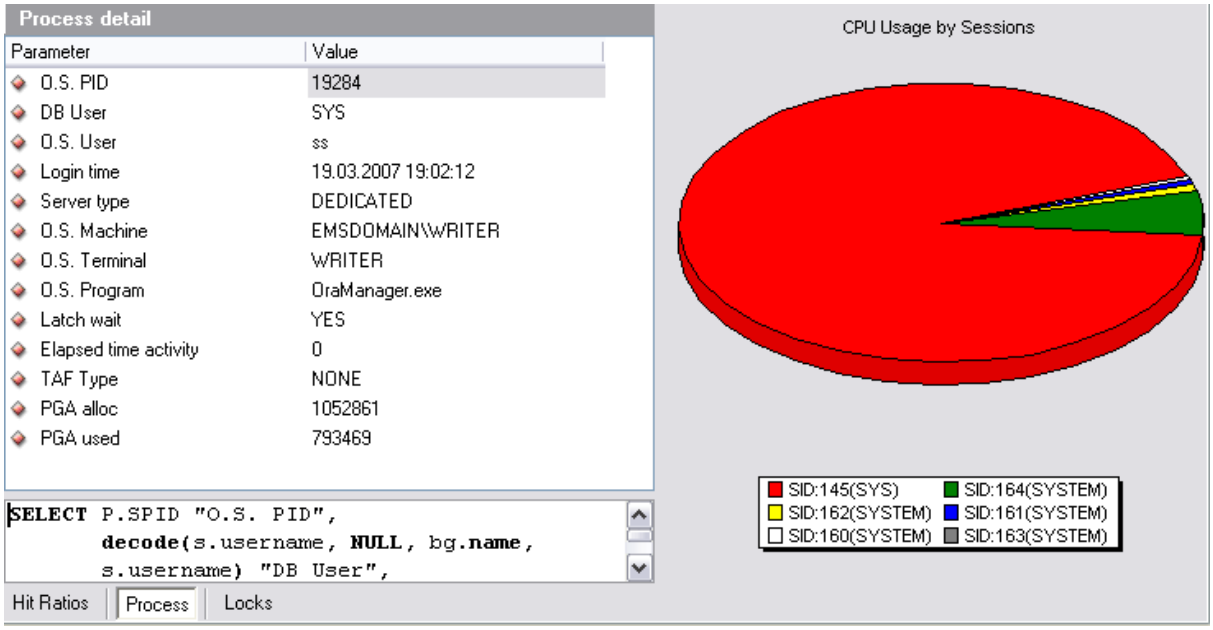
This tab provides session hit ratio details and displays hit ratio dynamics graphically.

The hit ratio of a user session is the ratio of number of correct predictions and the total number of links the user traversed in the session.



4.7.3.2 Process

This tab provides details on processes and displays CPU usage by sessions graphically.



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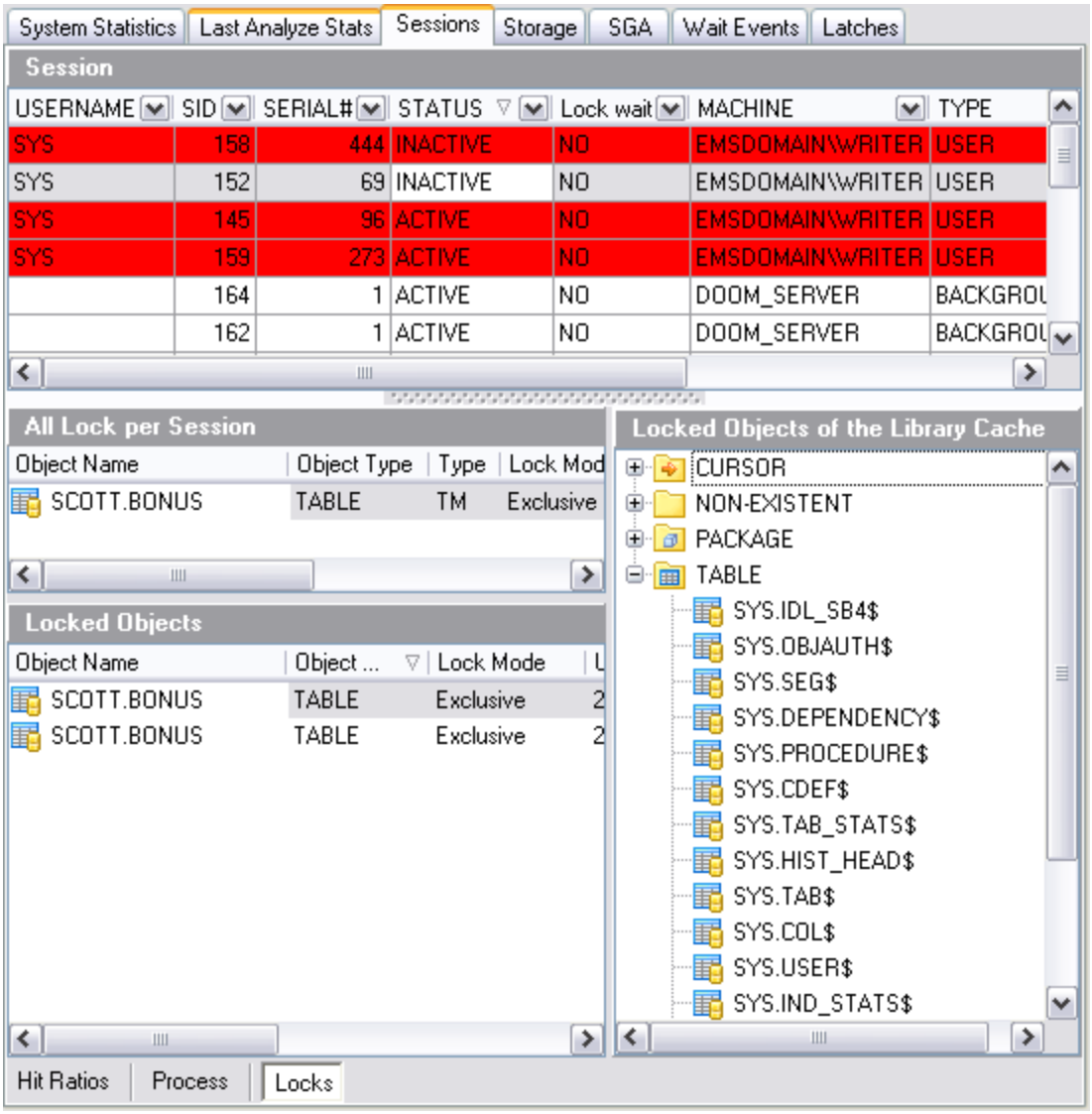
4.7.3.3 Locks

This tab displays all session locks. Select the desired session from the top list to see its locks/locked objects and detailed information on them at the bottom frame.



4.7.4 Storage

This tab allows viewing details on storage attributes on selected tablespaces, control files, data files, etc.

Please select the desired tablespace at the top frame to see its storage details at the bottom frame. You can also filter attibutes by segment type by defining it at the respective drop-down list.

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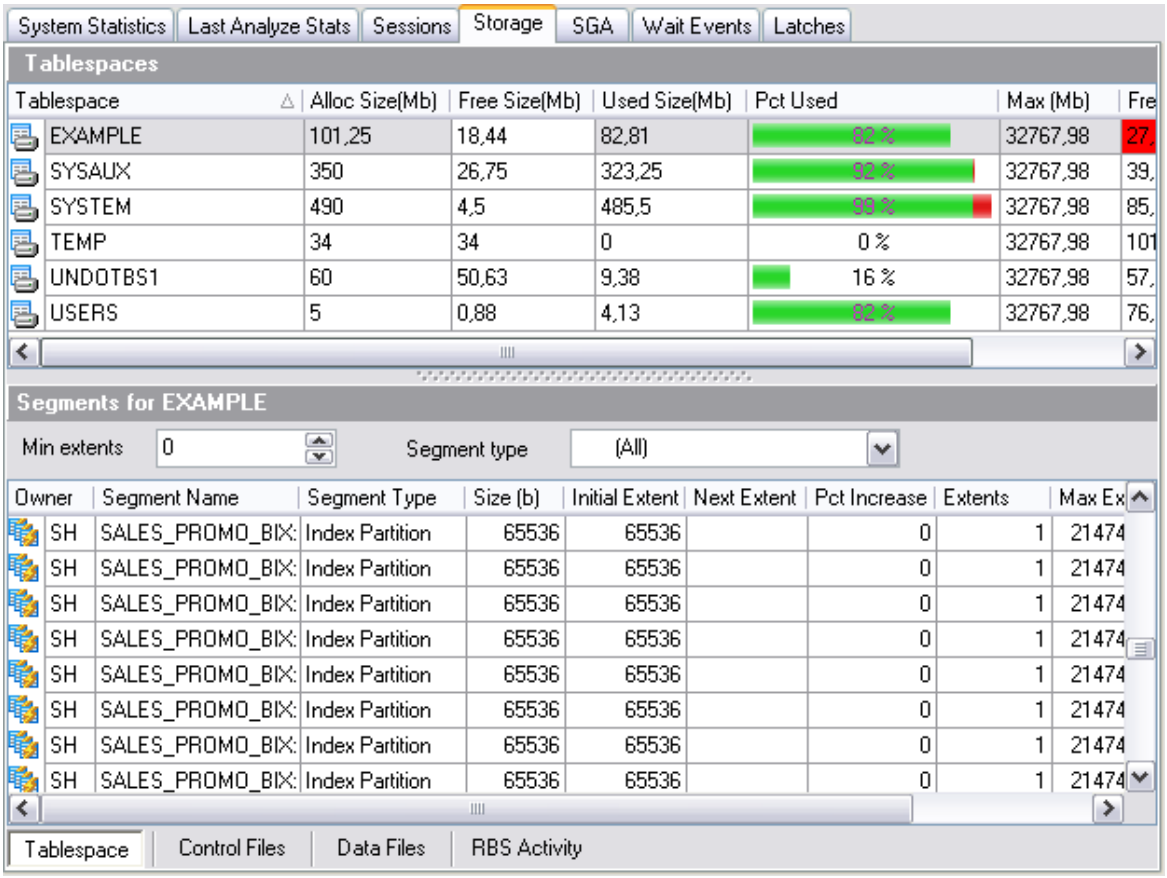

To get information on control files/data files or details of RBS (rollback segment) activity by pressing corresponding button at the bottom of the frame.

4.7.5 SGA

This tab allows you to view statistics on memory usage at SGA which is a group of shared memory structures that contain data and control information for one Oracle database instance.

At the **Summary SGA** frame the information on SGA memory and shred pool memory is available; it is also displayed graphically as a diagram (note that tou can click on it and holding the mouse button in order to rotate the diagram to get the best view).

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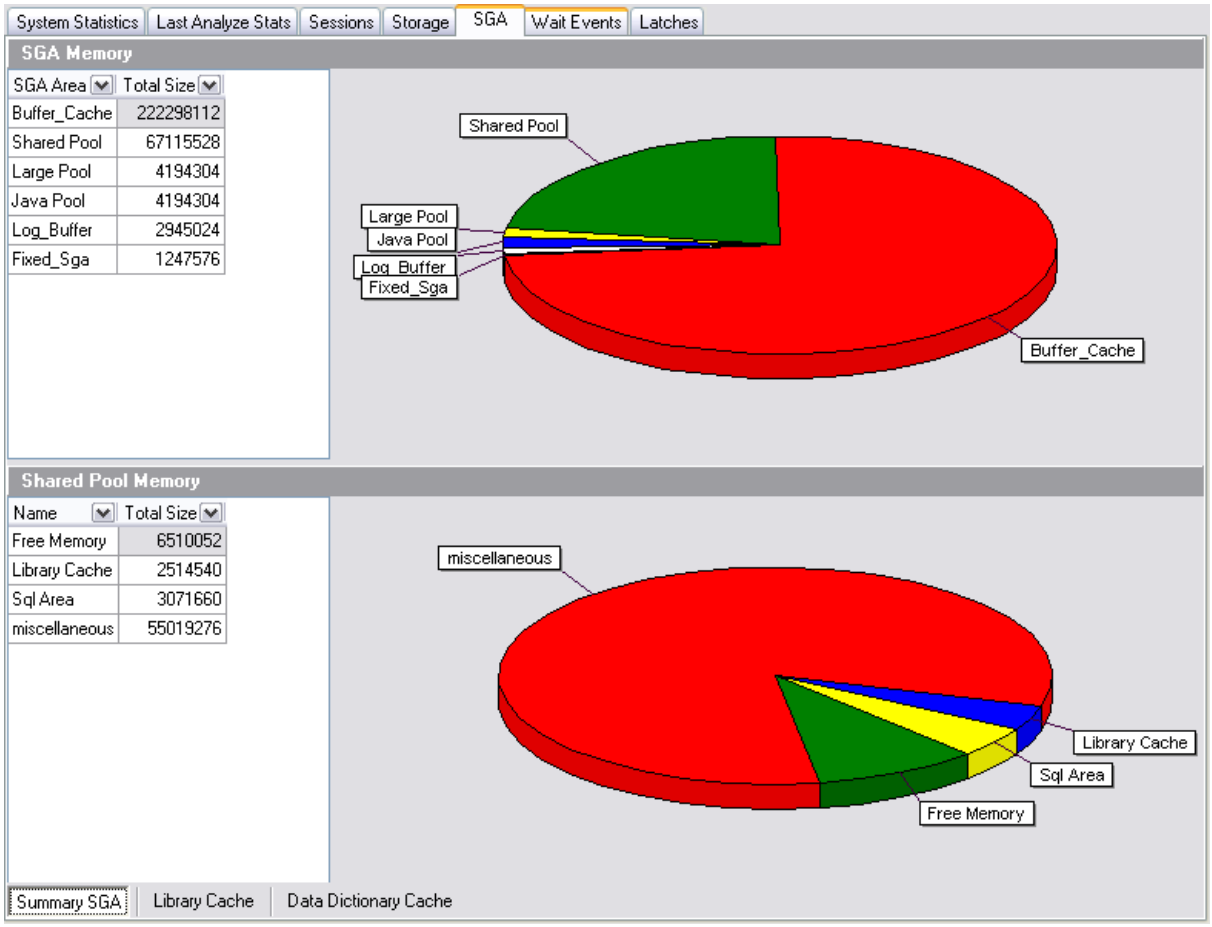

To obtain detailed information on library/data dictionary cache you need to switch to the corresponding tab by selecting the appropriate button at the bottom of the frame.

4.7.6 Wait Events

The following tab displays all wait events which present in the Oracle database server. For detailed information on wait event parameters and their descriptions please see your Oracle Database reference.

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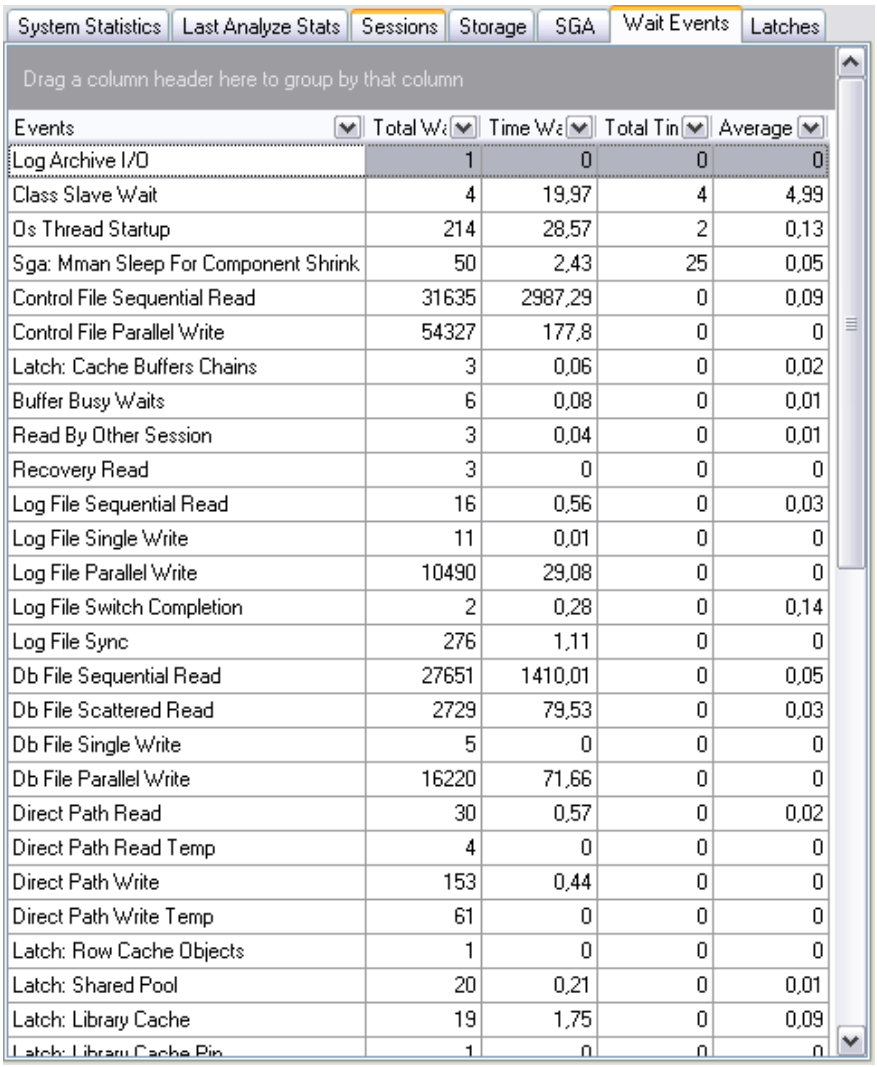

Events	Total Wa	Time Wa	Total Tin	Average
Log Archive I/O	1	0	0	0
Class Slave Wait	4	19,97	4	4,99
Os Thread Startup	214	28,57	2	0,13
Sga: Mman Sleep For Component Shrink	50	2,43	25	0,05
Control File Sequential Read	31635	2987,29	0	0,09
Control File Parallel Write	54327	177,8	0	0
Latch: Cache Buffers Chains	3	0,06	0	0,02
Buffer Busy Waits	6	0,08	0	0,01
Read By Other Session	3	0,04	0	0,01
Recovery Read	3	0	0	0
Log File Sequential Read	16	0,56	0	0,03
Log File Single Write	11	0,01	0	0
Log File Parallel Write	10490	29,08	0	0
Log File Switch Completion	2	0,28	0	0,14
Log File Sync	276	1,11	0	0
Db File Sequential Read	27651	1410,01	0	0,05
Db File Scattered Read	2729	79,53	0	0,03
Db File Single Write	5	0	0	0
Db File Parallel Write	16220	71,66	0	0
Direct Path Read	30	0,57	0	0,02
Direct Path Read Temp	4	0	0	0
Direct Path Write	153	0,44	0	0
Direct Path Write Temp	61	0	0	0
Latch: Row Cache Objects	1	0	0	0
Latch: Shared Pool	20	0,21	0	0,01
Latch: Library Cache	19	1,75	0	0,09
Latch: Library Cache Pin	1	0	0	0

4.7.7 Latches

Latches are low level serialization mechanisms used to protect shared data structures in the SGA. The implementation of latches is operating system dependent, particularly in regard to whether a process will wait for a latch and for how long.

This tab displays aggregate latch statistics for both parent and child latches, grouped by latch name.

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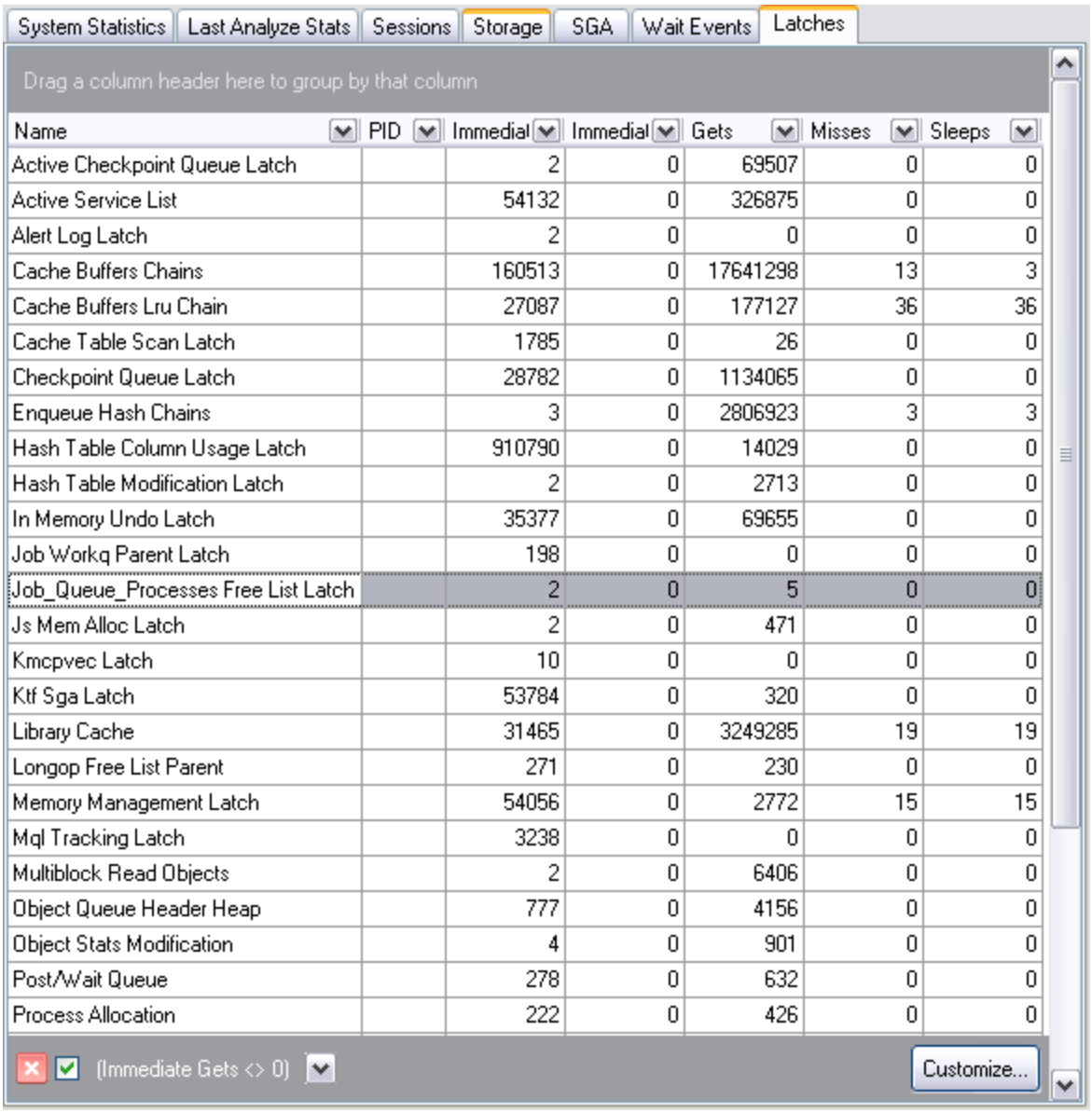

Name	PID	Immedial	Immedial	Gets	Misses	Sleeps
Active Checkpoint Queue Latch		2	0	69507	0	0
Active Service List		54132	0	326875	0	0
Alert Log Latch		2	0	0	0	0
Cache Buffers Chains		160513	0	17641298	13	3
Cache Buffers Lru Chain		27087	0	177127	36	36
Cache Table Scan Latch		1785	0	26	0	0
Checkpoint Queue Latch		28782	0	1134065	0	0
Enqueue Hash Chains		3	0	2806923	3	3
Hash Table Column Usage Latch		910790	0	14029	0	0
Hash Table Modification Latch		2	0	2713	0	0
In Memory Undo Latch		35377	0	69655	0	0
Job Workq Parent Latch		198	0	0	0	0
Job_Queue_Processes Free List Latch		2	0	5	0	0
Js Mem Alloc Latch		2	0	471	0	0
Kmcpvec Latch		10	0	0	0	0
Ktf Sga Latch		53784	0	320	0	0
Library Cache		31465	0	3249285	19	19
Longop Free List Parent		271	0	230	0	0
Memory Management Latch		54056	0	2772	15	15
Mql Tracking Latch		3238	0	0	0	0
Multiblock Read Objects		2	0	6406	0	0
Object Queue Header Heap		777	0	4156	0	0
Object Stats Modification		4	0	901	0	0
Post/Wait Queue		278	0	632	0	0
Process Allocation		222	0	426	0	0

For detailed information on latches and their descriptions please see your Oracle Database reference.

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Part V

5 Database Objects Management

SQL Manager 2007 for Oracle provides powerful tools to manage database objects.

Note: before working with database objects in SQL Manager 2007 for Oracle you should connect to the database first (see Database Management).

Create New Database Object

To create a database object:

Select the **Database | New Object** menu item.
Select the type of an object to create in the New Object Dialog.
Follow the steps of the wizard or edit object properties in the dialog depending on the selected object type.

Note that you can also create a specific database object (e.g. new table or new procedure) by selecting the appropriate item of the explorer tree context menu or by pressing the <Ctrl + N> hotkey.

Drop Database Object

To drop a database object:

Select a database object to drop in the explorer tree.
Right-click the object to drop to bring the popup menu.
Select the **Drop <object type> <object name>** menu item.
Confirm dropping in the dialog window.

Edit Database Object

To edit a database object:

Select a database object in the explorer tree.
Right-click the object to drop to bring the popup menu.
Select the **Edit <object type> <object name>** menu item.

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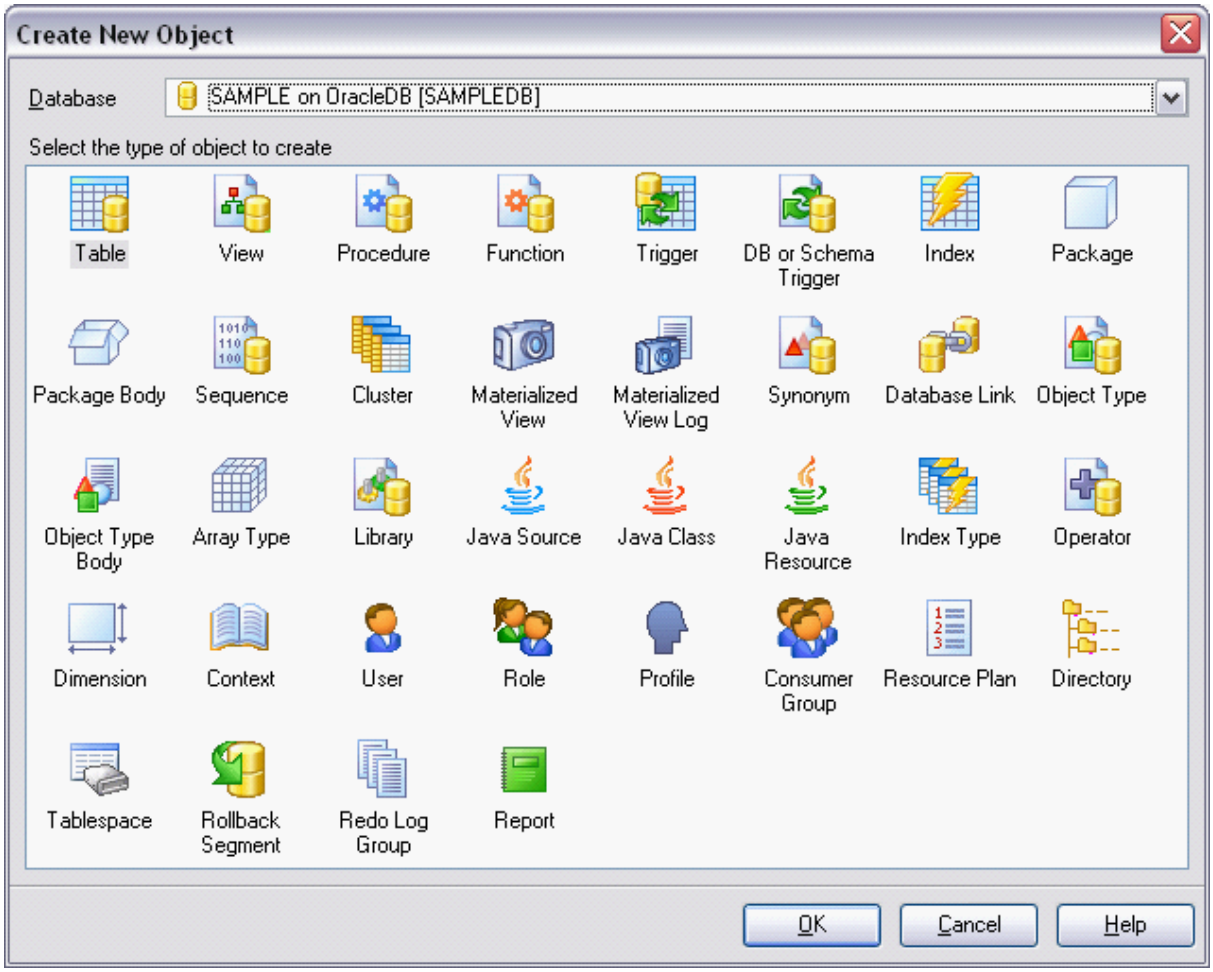
5.1 New Object

The **New Object** dialog allows you to select an object type for creating and run the appropriate wizard or dialog. To open the dialog select the **Database | New Object...** menu item.

Select a database, where the new object should be created, from the **Database** dropdown list. Pick an object type icon and click the OK button to invoke the corresponding wizard or dialog.

See also:

Duplicate Object Wizard



Availability:

Windows Full	Yes
Windows Lite	Yes

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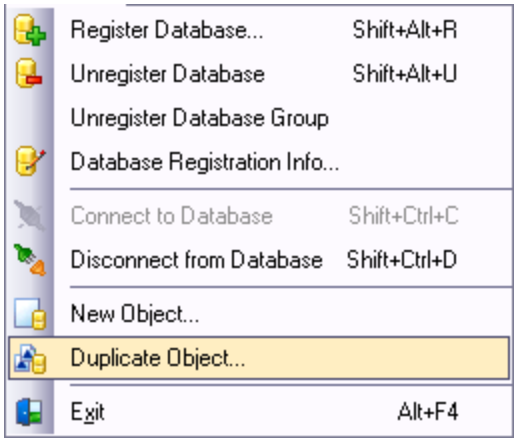
5.2 Duplicate Object

To duplicate a database object you can either select it in the explorer tree and use the **Duplicate <object type> <object name>...** item from the object popup menu, or use the **Database | Duplicate Object...** menu item to invoke the Duplicate Object Wizard.



5.2.1 Duplicate Object Wizard

Use the **Duplicate Object Wizard** to create a new database object with the same properties as one of the existing ones. To open the wizard select the **Database | Duplicate Object...** menu item.

- Selecting source database
- Selecting object to duplicate
- Selecting destination database
- Modifying new object's definition
- Using templates

See also:

New Object

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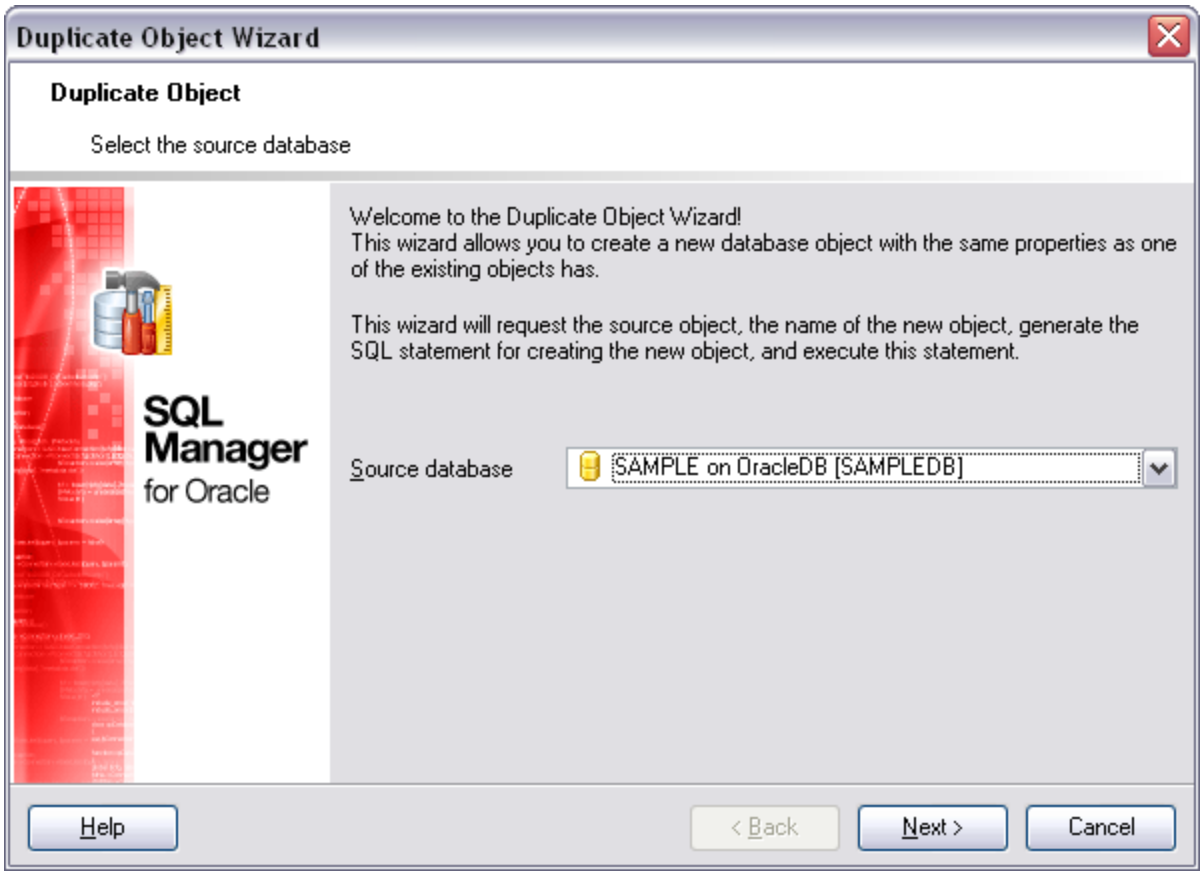
Duplicate Object Wizard
Duplicate Object
Select the source database
SQL Manager for Oracle
Welcome to the Duplicate Object Wizard!
This wizard allows you to create a new database object with the same properties as one of the existing objects has.
This wizard will request the source object, the name of the new object, generate the SQL statement for creating the new object, and execute this statement.
Source database
SAMPLE on OracleDB [SAMPLEDB]
Help
< Back
Next >
Cancel

5.2.1.1 Selecting source database

Select the database containing a source object.

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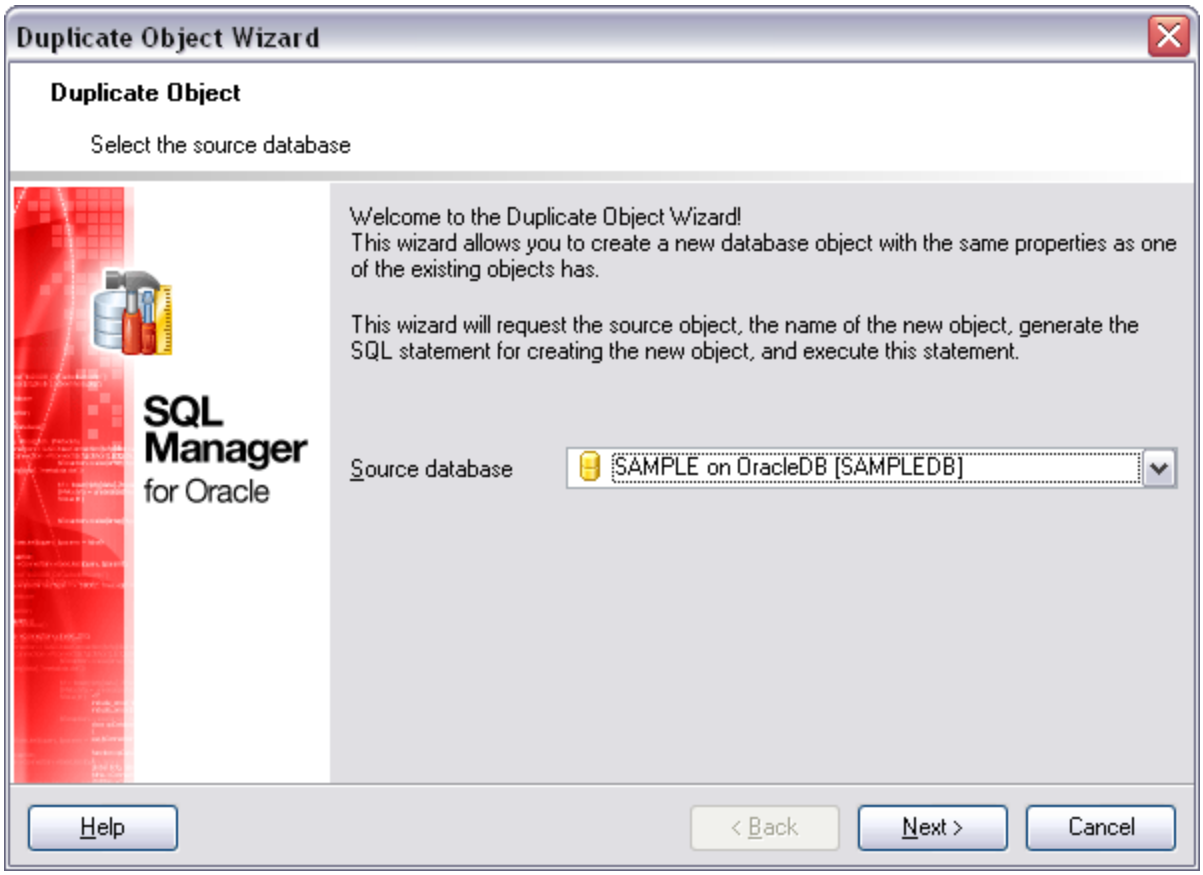
Duplicate Object Wizard
Duplicate Object
Select the source database
SQL Manager for Oracle
Welcome to the Duplicate Object Wizard!
This wizard allows you to create a new database object with the same properties as one of the existing objects has.
This wizard will request the source object, the name of the new object, generate the SQL statement for creating the new object, and execute this statement.
Source database
SAMPLE on OracleDB [SAMPLEDB]
Help
< Back
Next >
Cancel

5.2.1.2 Selecting object to duplicate

Select a database object to copy its properties to the new object.

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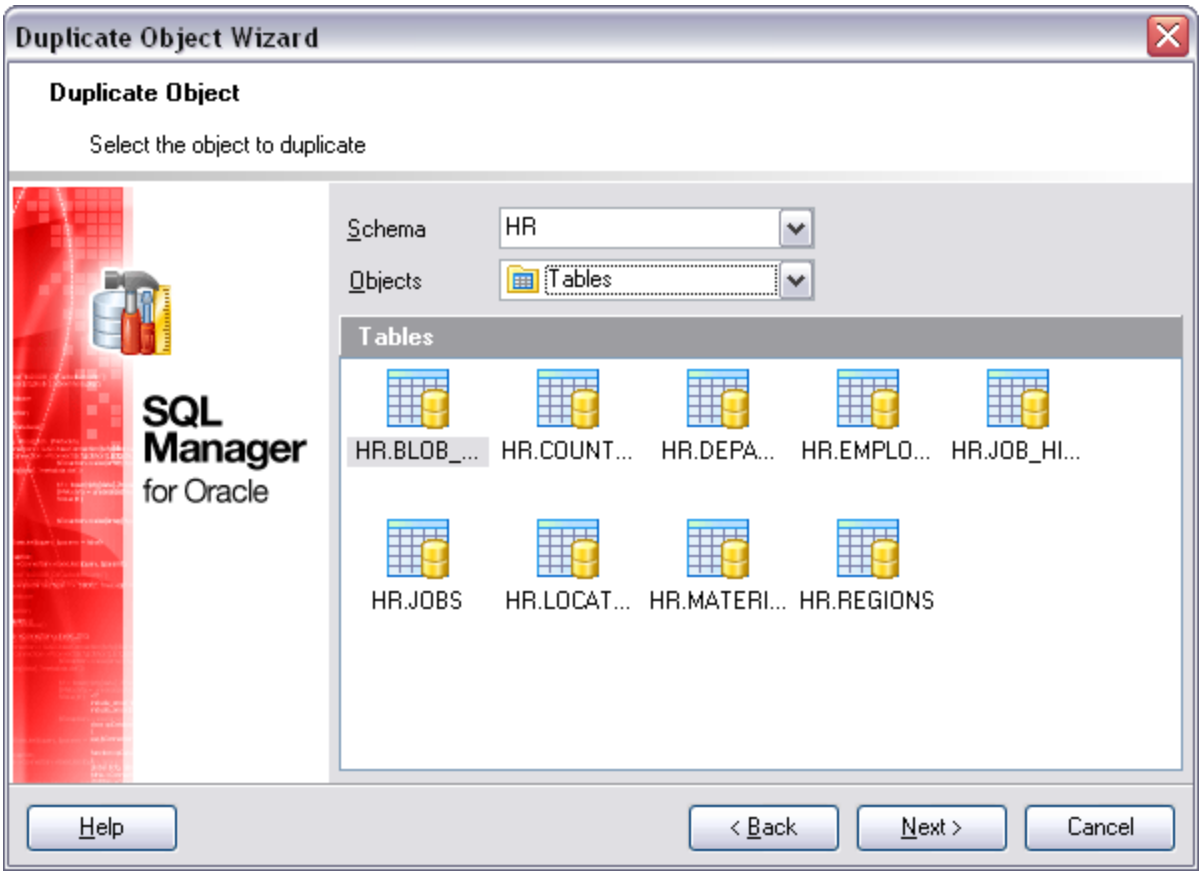

5.2.1.3 Selecting destination database

Select the database to create a new object, set the name of the new database object.

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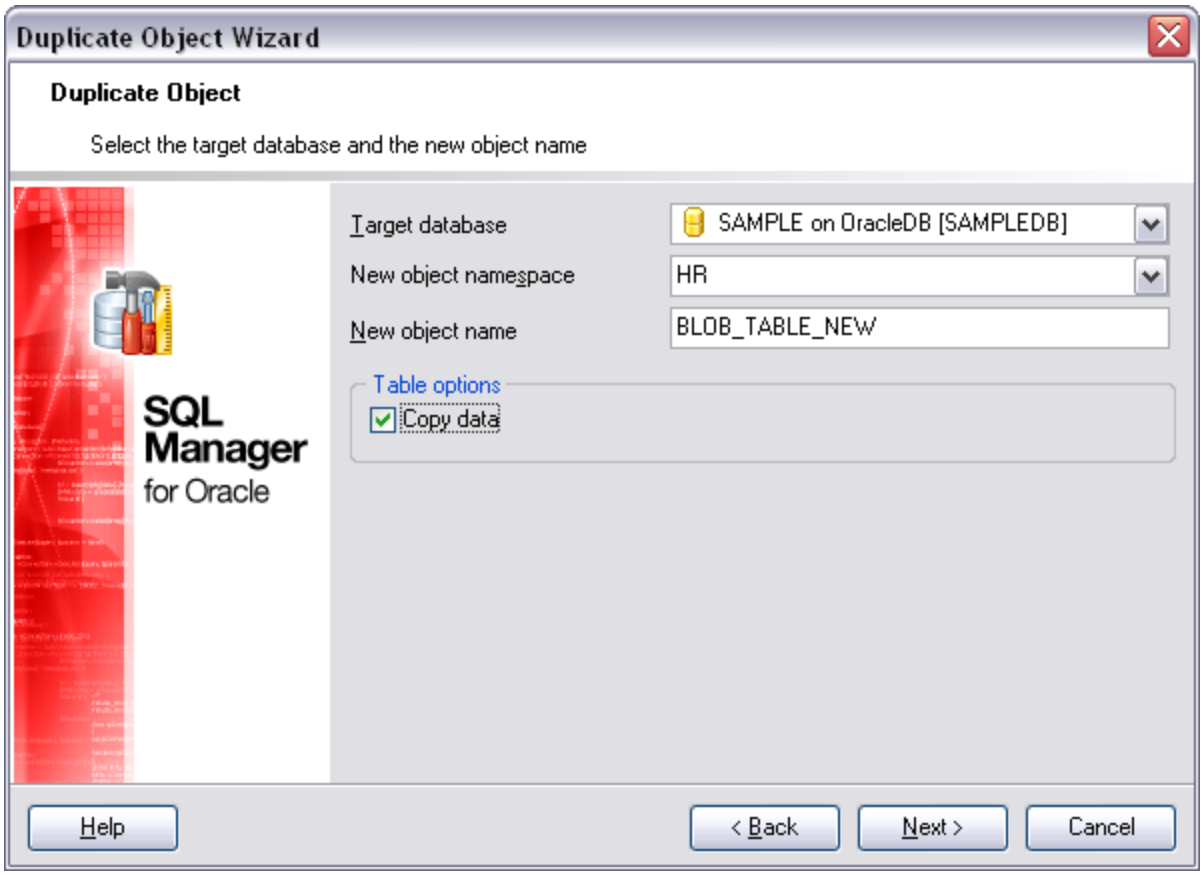

5.2.1.4 Modifying new object's definition

Browse the result SQL statement. You can edit it if necessary. Click **Finish** button when done.

Close the Wizard after duplicating
Check this option if you don't intend to duplicate more objects.

Open object when finished
This control defines whether the object duplicated should be opened with the corresponding object editor after finishing.

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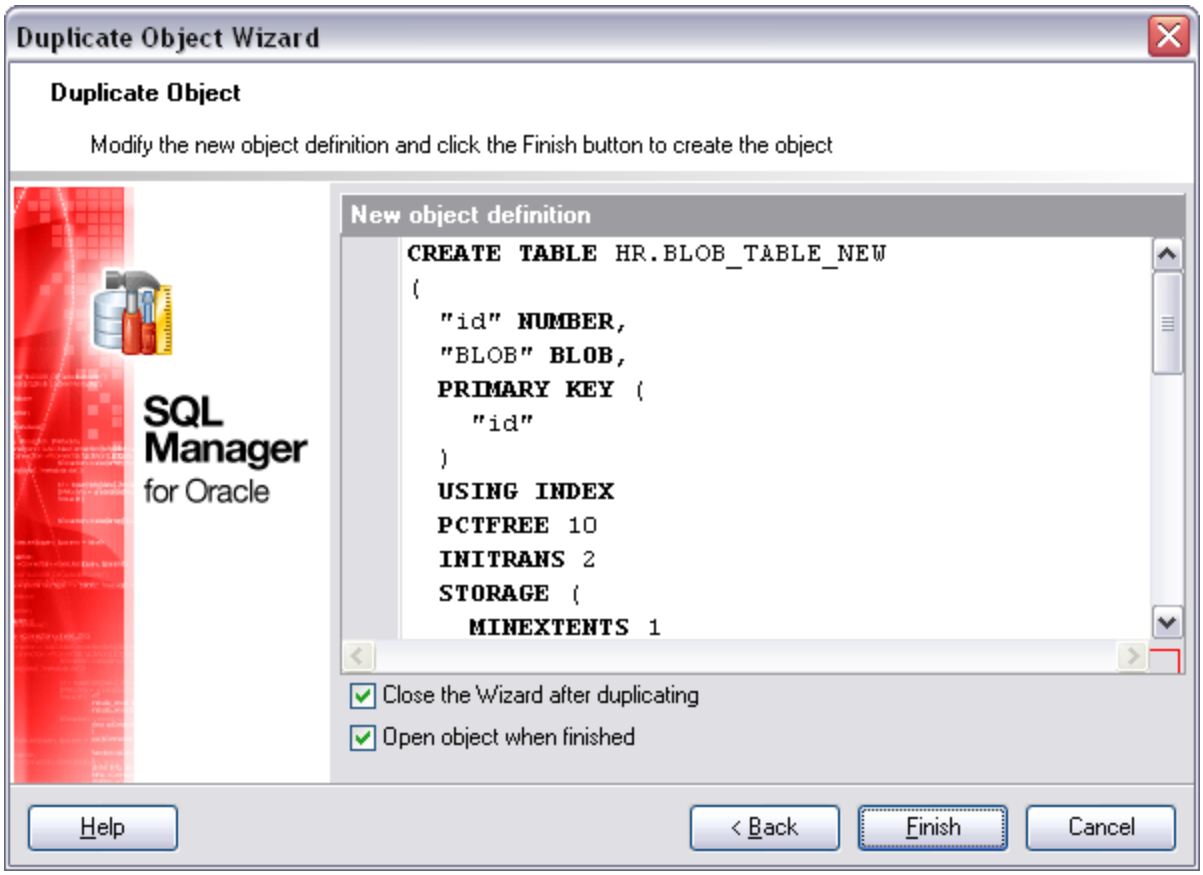

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5.3 Schema objects

A **schema** is a collection of logical structures of data, or schema objects. A schema is owned by a database user and has the same name as that user. Each user owns a single schema. Schema objects can be created and manipulated with SQL and include the following types of objects:

Array Types
Clusters
Database links
Database triggers
Dimensions
Functions
Libraries
Indices
Index Types
Java classes, Java resources, Java sources
Materialized views
Materialized view logs
Object types, Object type bodies
Operators
Packages, Package bodies
Procedures
Sequences
Synonyms
Tables
Triggers
Views

Use DB Explorer tree to navigate between schemas and its objects.

See also:
Non Schema objects

5.3.1 Storage attributes

The **Storage properties** frame lets you specify how a database object should be stored in a database. Storage parameters affect both how long it takes to access data stored in the database and how efficiently space in the database is used.

First specify object's physical attributes - **Tablespace** (which is an allocation of space in the database that can contain schema objects.) and **Buffer pool**.

The **Buffer pool** parameter lets you specify a default buffer pool or cache for an object. All blocks for the object are stored in the specified cache.

- The **KEEP** buffer pool retains the schema object's data blocks in memory.
- The **RECYCLE** buffer pool eliminates data blocks from memory as soon as they are no longer needed.
- The **DEFAULT** buffer pool contains data blocks from schema objects that are no

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tassigned to any buffer pool, as well as schema objects that are explicitly assigned to the DEFAULT pool.

Initial number of transactions
Specify the initial number of concurrent transaction entries allocated within each data block allocated to the database object.

Use the **Cache** option to indicate how Oracle should store blocks in the buffer cache.

Specify **Row dependencies** if you want to enable row-level dependency tracking. This setting is useful primarily to allow for parallel propagation in replication environments.

Extents
An extent is a logical unit of database storage space allocation made up of a number of contiguous data blocks. One or more extents in turn make up a segment. When the existing space in a segment is completely used, Oracle allocates a new extent for the segment.

Initial extent
Specify the size of the first extent of the object. Oracle allocates space for this extent when you create the schema object.

Next extent
Specify in bytes the size of the next extent to be allocated to the object.

Percent increase
Specify the percent by which the third and subsequent extents grow over the preceding extent. The default value is 50, meaning that each subsequent extent is 50% larger than the preceding extent.

Minimum extent
Specify the total number of extents to allocate when the object is created. This parameter lets you allocate a large amount of space when you create an object, even if the space available is not contiguous.

Maximum extent
Specify the total number of extents, including the first, that Oracle can allocate for the object.

Set **Free lists** properties for the current object in the appropriate group.

Free lists
The default and minimum value for this parameter is 1, meaning that each free list group contains one free list.

Groups
Specify the number of groups of free lists for the database object you are creating. The default and minimum value for this parameter is 1.

Space usage parameters

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Enable you to control the use of free space for inserts and updates to the rows in all the data blocks of a particular segment.

The **Percent free** parameter sets the minimum percentage of a data block to be reserved as free space for possible updates to rows that already exist in that block.

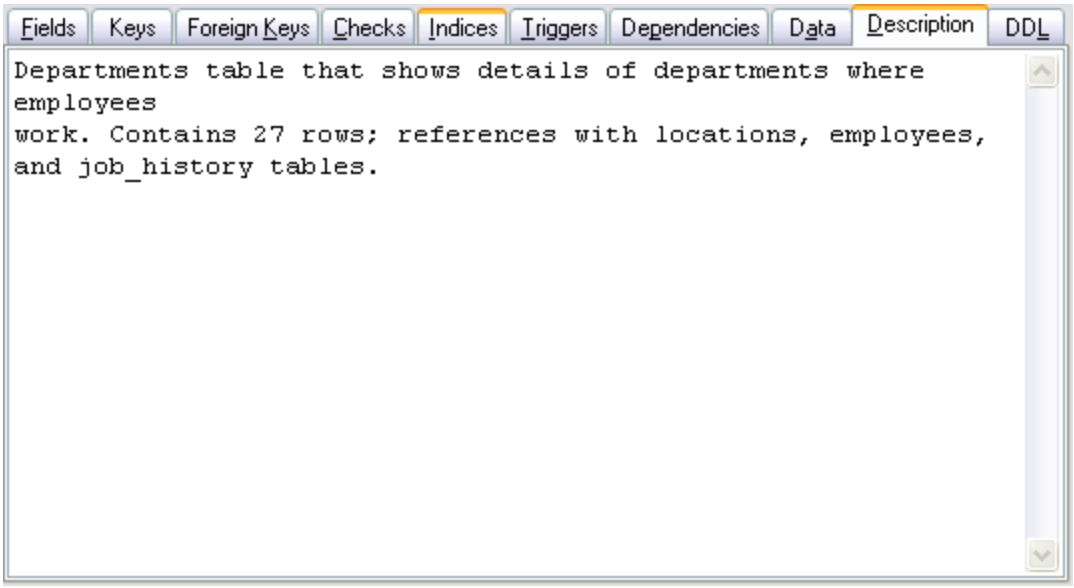
The **Percent used** parameter sets the minimum percentage of a block that can be used for
row data plus overhead before new rows are added to the block.

The **Parallel** and **Parallel options** groups lets you parallelize the creation of the object.

Select the **Parallel** option if you want to select a **Degree** of parallelism equal to the number of CPUs available on all participating **Instances**.

5.3.2 Editing object description

The **Description** tab allows you to view and edit the comment for the object.



5.3.3 Viewing object DDL definition

The **DDL** tab displays the SQL statements for creating the objects with all its subobjects (if there are any). This text is read-only. If you want to change the object definition, use the appropriate editor tabs instead, or copy the text to the Windows Clipboard and paste it in the SQL Editor or SQL Script Editor.

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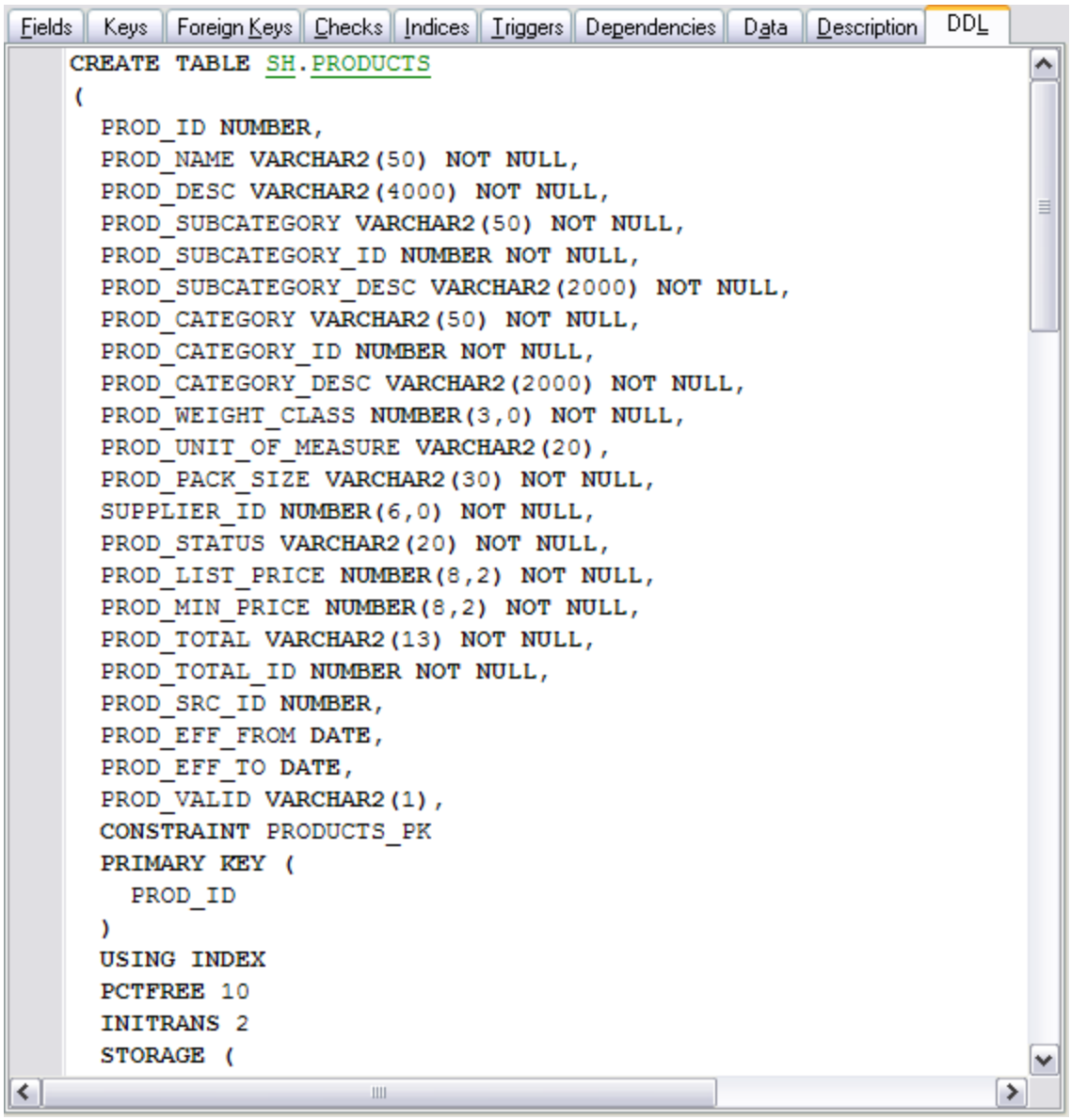

5.3.4 Browsing object dependecies

The **Dependencies** tab allows you to view objects that depend on edited object and objects that edited object depends. Below you can see DDL of currently selected object.

Double-click on any shown object opens the appropriate object editor.

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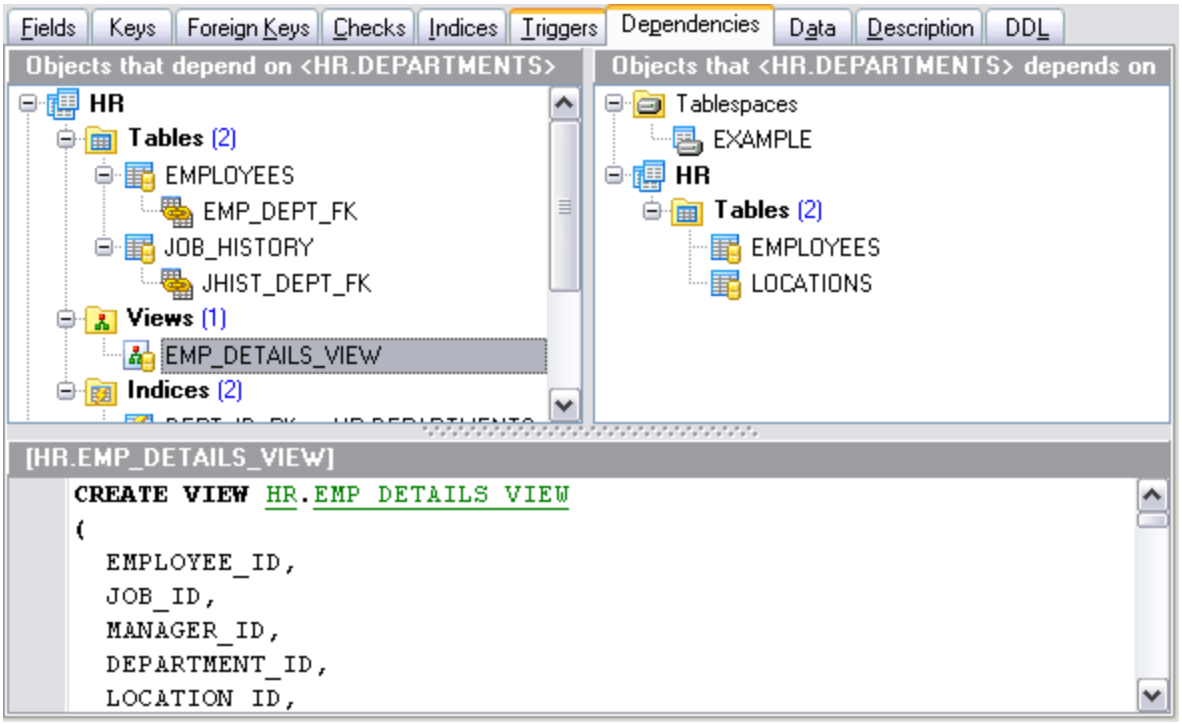

5.3.5 Tables

Relational databases store all their data in **tables**. A table is a data structure consisting of an unordered set of horizontal rows, each containing the same number of vertical columns. The intersection of an individual row and column is a field that contains a specific piece of information. Much of the power of relational databases comes from defining the relations among the tables.

Create table

To create a new table:

- Select the **Database | New Object** menu item.
- Select **Table** in the New Object window.
- Edit table properties and fields on the appropriate tabs of the New Table window.

Hint: To create new table you can also right-click the **Tables** node of the explorer tree and select the **New Table...** item from the popup menu.

To create a new table with the same properties as one of the existing tables has:

- Select the **Database | Duplicate Object** menu item.
- Follow the instructions of the Duplicate Object Wizard.

The Duplicate Object Wizard window allows you to select the database to create the new table in and to edit the result SQL statement for creating the table.

Edit table

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To edit the existing table (manage its fields, indices, data, etc):

- Select the table for editing in the explorer tree (type the first letters of the table name for quick search).
- Right-click and select the **Edit Table <Table_Name>** item in the popup menu or simply double-click the table.
- Edit table subobjects and data on the appropriate tabs of the Table Editor.

Drop table

To drop a table:

- Select the table for editing in the explorer tree.
- Right-click and select the **Drop Table <Table_Name>** item from the popup menu.
- Confirm dropping in the dialog window.

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5.3.5.1 New table

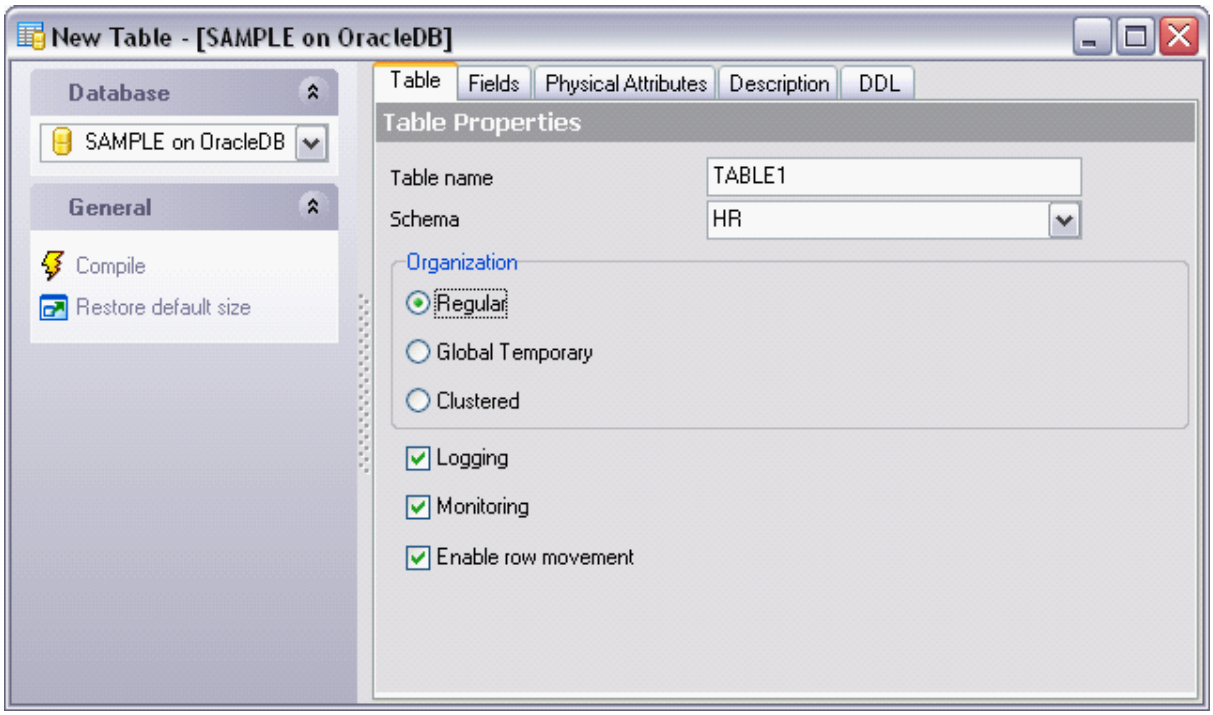
New Table window allows you to create new table, set table properties, specify table fields and edit table description.

New Table window can be open automatically after the table is created. (see Create Table for details).

- Using navigation bar
- Setting table properties
- Object storage attributes
- Specifying table fields

See also:

Table Editor
Field Editor



5.3.5.1.1 Using navigation bar

The navigation bar on the left allows you to:

Object bar:

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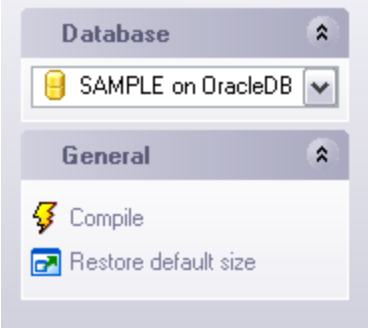
- Select a database for creating table.

General bar:
- Compile the current table definition.
- Bring the window to its default size.



5.3.5.1.2 Setting table properties

The **Table** tab lets you set table properties.

First, specify table name and schema to which current table belongs. Then define the type of the table.

For **Regular** tables set some type-specific options:

Monitoring
Use the option to start the collection of modification statistics on this table.

Set **Logging** whether the creation of the table will be logged in the redo log file.

No row movement
This option lets you specify whether the database can move a table row. It is possible for a row to move, for example, during table compression or an update operation on partitioned data. Select this option to allow the database to move a row, thus changing the rowid.

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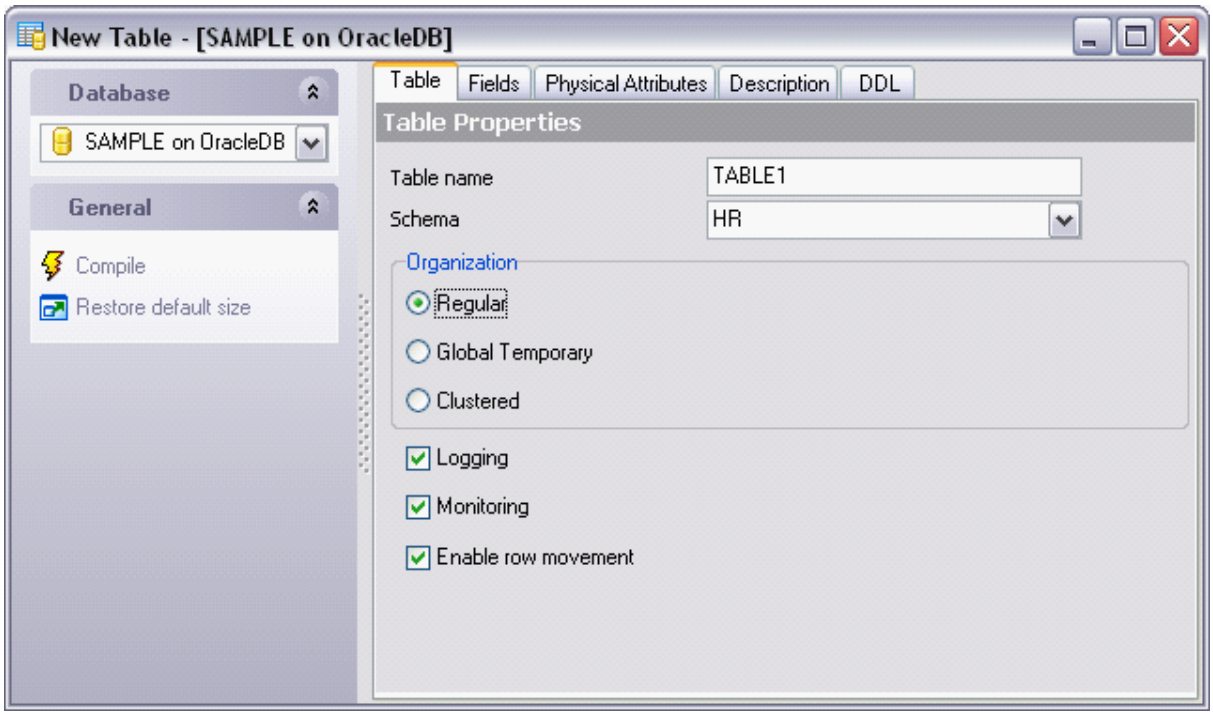

Select the **Global Temporary** table type to specify that the table is temporary and that its definition is visible to all sessions with appropriate privileges. The data in a temporary table is visible only to the session that inserts the data into the table.

For a **Global Temporary** table you can set the following parameters:

Duration
The table segment and any data the table contains can be either session-specific or transaction-specific data. You are able to specify whether the table segment and data are session- or transaction-specific at the **On commit** group.

On commit
This option specifies whether the data in the temporary table persists for the duration of a transaction or a session.

Delete rows
Oracle will truncate the table (delete all its rows) after each commit.

Preserve rows
Oracle will truncate the table (delete all its rows) when you terminate the session.

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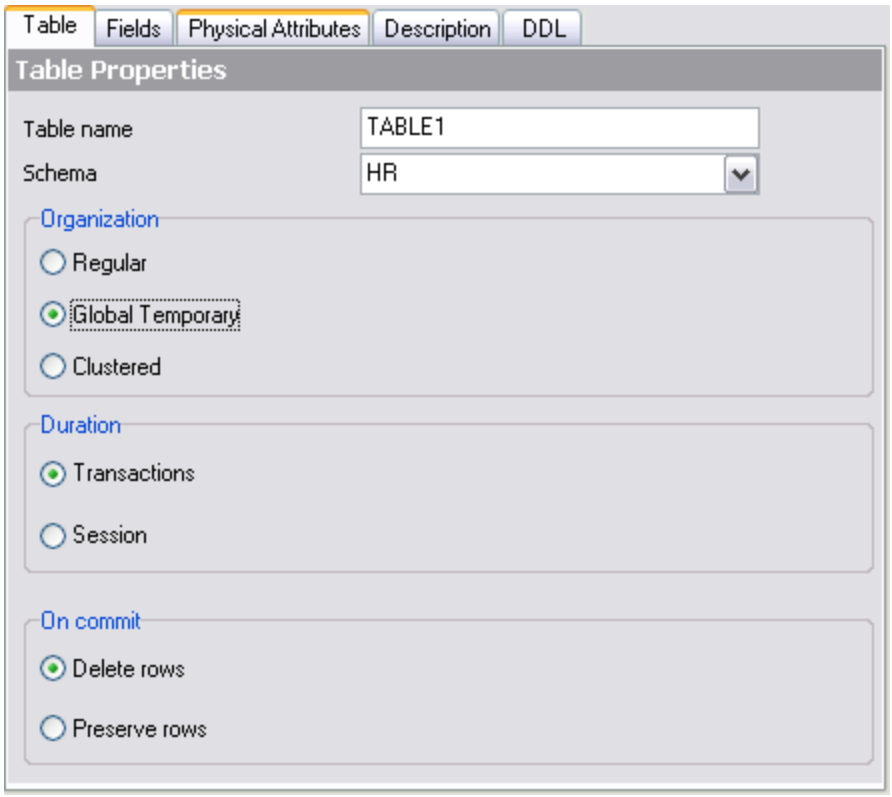

Clustered table
Select **Clustered** to define that the table is a part of cluster. The columns listed at the field below are the table columns that correspond to the cluster columns. To create a clustered table you need to specify name of the cluster and its schema.

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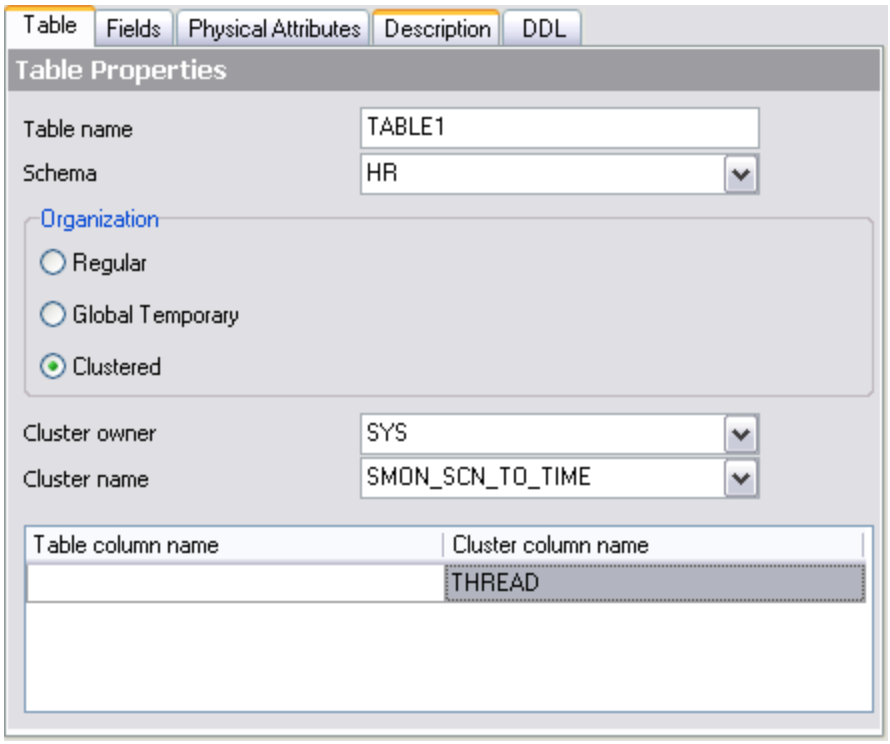

Index-organized table
This type of tables has a storage organization that is a variant of a primary B-tree. Data for an index-organized table is stored in a B-tree index structure in a primary key sorted manner. Besides storing the primary key column values of an index-organized table row, each index entry in the B-tree stores the nonkey column values as well.

To set the IOT primary constraint move the primary key which uniquely identifies the row from the **Available** list into **Selected**.

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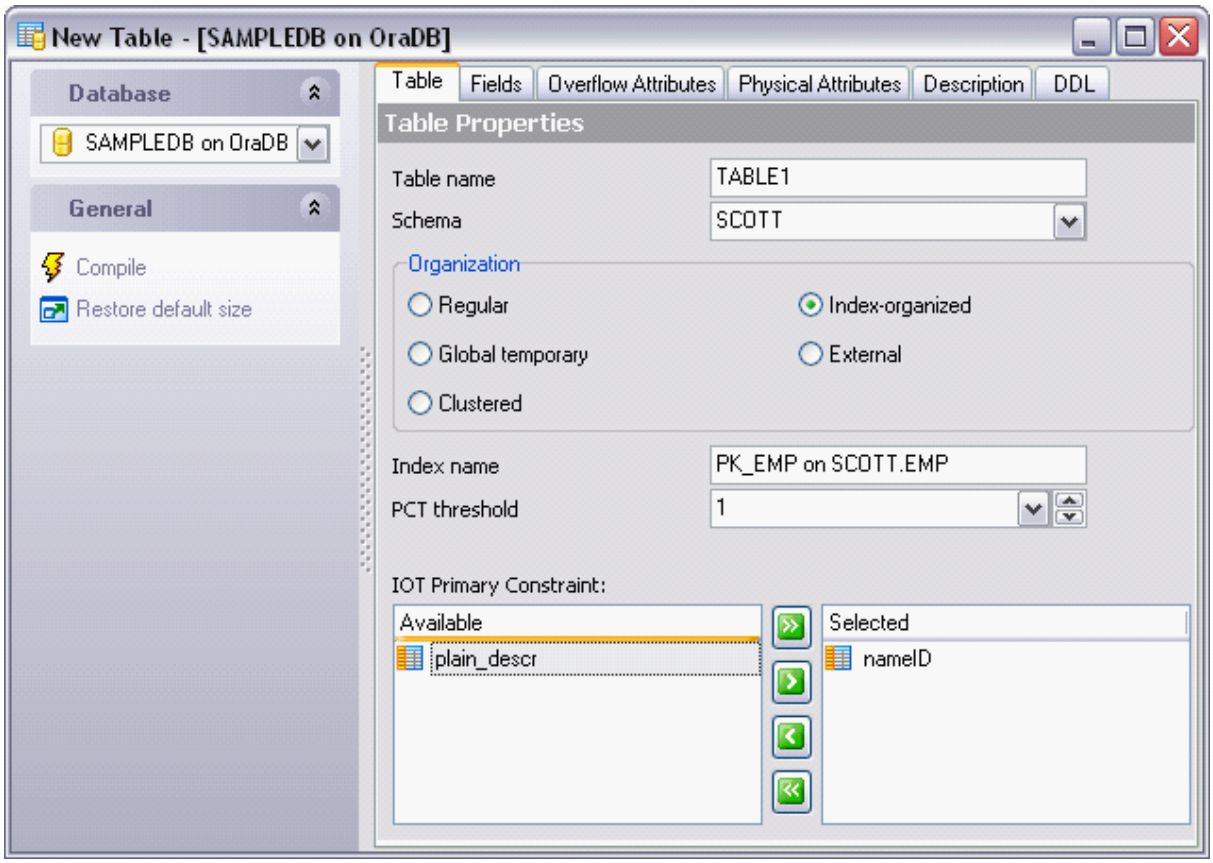

External tables
Defines that an external table should be created which accesses data in external sources as if it were in a table in the database. To obtain more information on this table type please see External table parameters.

Table storage attributes can be set at the Physical attributes frame.

5.3.5.1.2.1 External table parameters

An external table does not describe any data that is stored in the database. Nor does it describe how data is stored in the external source. Instead, it describes how the external table layer needs to present the data to the server.

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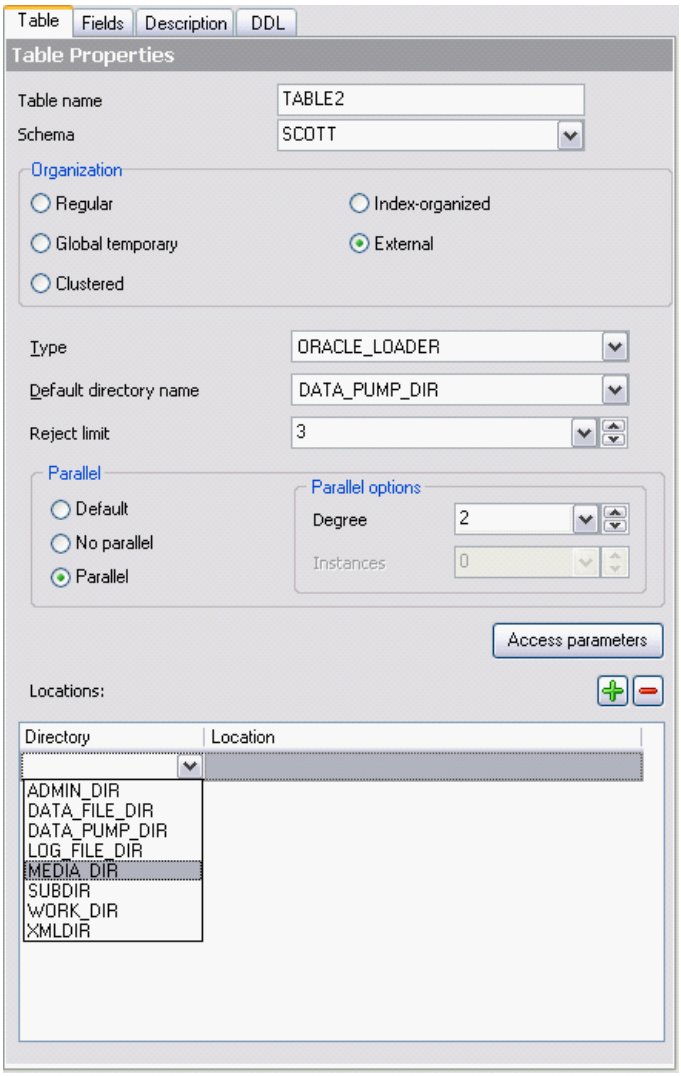

Type
Specify The Access Driver type - ORACLE_LOADER, which lets you read table data from an external table and load it into a database. Oracle also provides the ORACLE_DATAPUMP type, which lets you unload data (that is, read data from a table in the database and insert it into an external table) and then reload it into an Oracle database.

Parallel options
The degree of parallel access to an external table is specified using standard parallel hints and with the PARALLEL clause.

Default directory name
Specify a default directory object corresponding to a directory on the file system where the external data sources may reside.

Reject limit
Specify how many conversion errors can occur during a query of the external data before an Oracle Database error is returned and the query is aborted.

Locations

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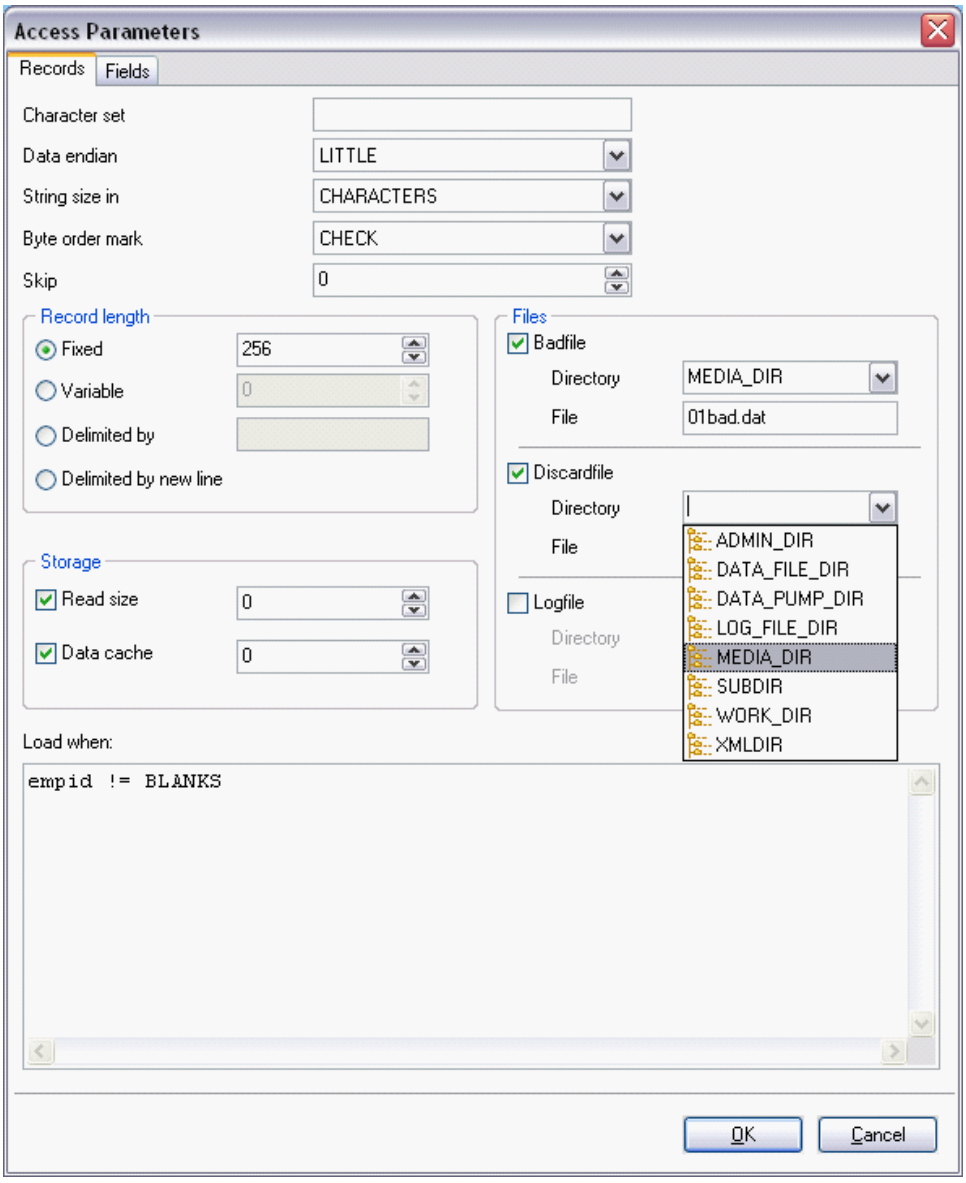
Use the green plus button to specify one or more external data sources (red minus button removes selected location). Usually the data source is a file, but it need not be. It is up to the access driver to interpret this information in the context of the external data.

The dialog called by pressing the corresponding button provides the interface to the external table access driver. You specify access parameters when you create the external table.

The access parameters described in this chapter provide the interface to the external table access driver. You specify access parameters when you create the external table.



Character set
Identifies the character set of the datafile.

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Data endian
Indicates the endianness of data whose byte order may vary depending on the platform that generated the datafile.

String size in
Indicates whether the lengths specified for character strings are in bytes or characters.

Byte order mark
Specify whether or not the datafile should be checked for the presence of a byte-order mark (BOM).
- UNCHECK indicates that the datafile should not be checked for a BOM and that all the data in the datafile should be read as data.
- CHECK indicates that the datafile should be checked for a BOM. This is the default behavior for a datafile in a Unicode character set.

Skip
Skips the specified number of records in the datafile before loading. This parameter can only be specified when nonparallel access is being made to the data.

Record length

Fixed
Identifies the records as all having a fixed size of length bytes. The size specified for **Fixed** records must include any record termination characters, such as newlines. Compared to other record types, fixed-length fields in fixed-length records are the easiest field and record formats for the access driver to process.

Variable
Indicates that the records have a variable length and that each record is preceded by a character string containing a number with the count of bytes for the record. The length of the character string containing the count field is the size argument that follows the **Variable** parameter. Note that size indicates a count of bytes, not characters. The count at the beginning of the record must include any record termination characters, but it does not include the size of the count field itself. The number of bytes in the record termination characters can vary depending on how the file is created and on what platform it is created.

Delimited by
Indicates the characters that identify the end of a record.

Delimited by newline
Specifies that the actual value used is platform-specific. On UNIX platforms, NEWLINE is assumed to be "\n". On Windows NT, NEWLINE is assumed to be "\r\n".

Files

Badfile
Name the file to which records are written when they cannot be loaded because of errors. The purpose of the bad file is to have one file where all rejected data can be examined and fixed so that it can be loaded.

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Discard file
Name the file to which records are written that fail the condition in the LOAD WHEN clause.

Log file
Name the file that contains messages generated by the external tables utility while it was accessing data in the datafile.

Setting any of the three parameters described above you are to specify an appropriate directory/filename.

Storage

Read size
Specify the size of the read buffer. The size of the read buffer is a limit on the size of the largest record the access driver can handle.

Data cache
Specify the date cache size (in entries). By default, the date cache feature is enabled (for 1000 elements). To completely disable the date cache feature, set it to 0. The date cache feature is only available for direct path loads.

Load when
Identify the records that should be passed to the database.

The following are some examples:
empid != BLANKS
(dept_id = "SPORTING GOODS" OR dept_id = "SHOES") AND total_sales != 0

At the top of the form you specify default parameters for the fields as described below:

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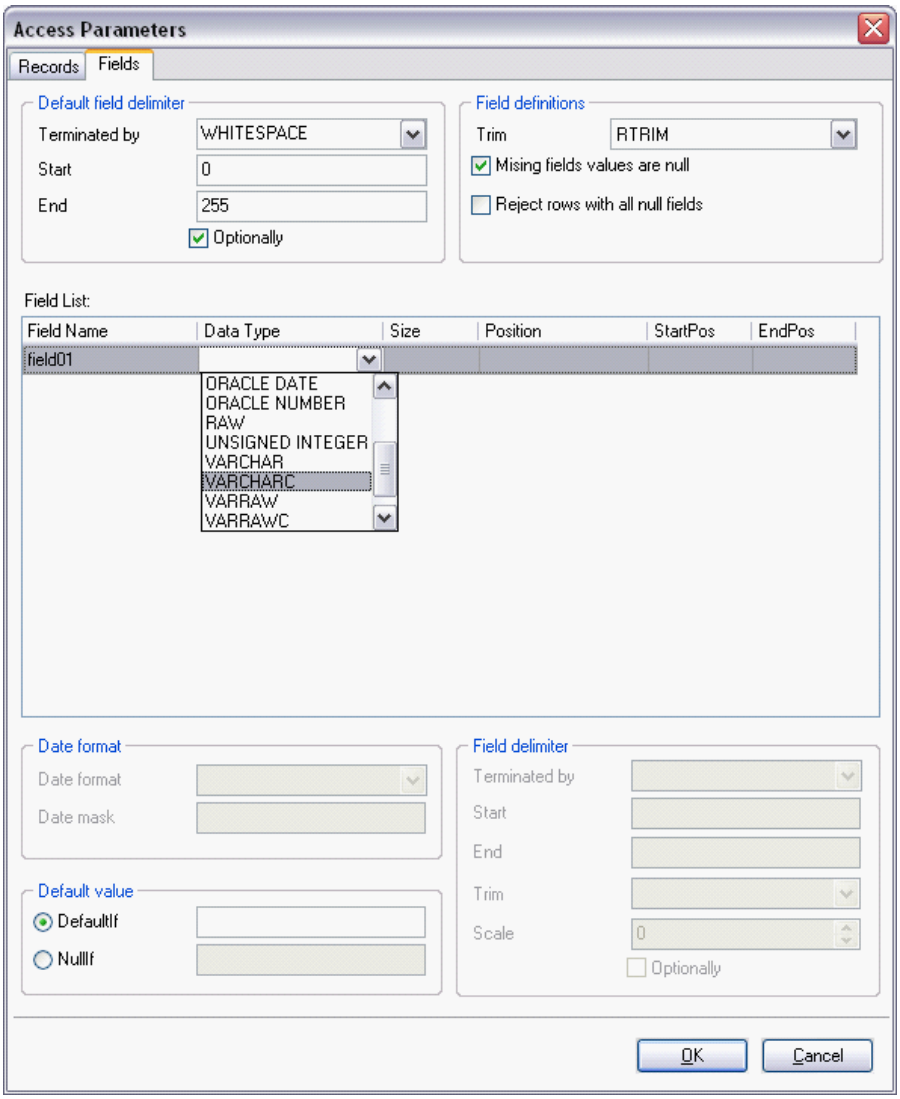

Terminated by
Define the delimiter to show that everything between the current position in the record and the next occurrence of the termination string is considered part of the field.

Start / End
If you set these parameters, the access driver starts at the current position in the record and skips over all whitespace looking for the first delimiter. All whitespace between the current position and the first delimiter is ignored. Next, the access driver looks for the second enclosure delimiter (or looks for the first one again if a second one is not specified). Everything between those two delimiters is considered part of the field.

The **Optionally** parameter means the **Start / End** delimiters can either both be present or both be absent.

Trim
Used to specify that spaces should be trimmed from the beginning of a text field, the end of a text field, or both. Spaces include blanks and other nonprinting characters such as tabs, line feeds, and carriage returns.

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Missing field values are null
Indicates that if there is not enough data in a record for all fields, then those fields with missing data values are set to NULL.

Reject rows with all null fields
Indicates that a row will not be loaded into the external table if all referenced fields in the row are null.

The **Field list** group identifies the fields in the datafile and their datatypes.

Field name
is a string identifying the name of a field in the datafile.

Data type
Indicates the datatype of the field. If datatype is omitted, the access driver assumes the datatype is CHAR(255).

Size
Define the maximum size for the **Data type**.

StartPos
Number of bytes or characters from the beginning of the record to where the field begins. It positions the start of the field at an absolute spot in the record rather than relative to the position of the previous field.

EndPos
Indicates the absolute byte or character offset into the record for the last byte of the field.

Note the the **Position** parameter should be specified if you use StartPos / EndPos parameters.

At the bottom you can set specific parameters for the fields selected from the **Field list**.

5.3.5.1.3 Specifying fields

The **Fields** tab is intended for specifying table fields. Double-click a field to open the Field Editor for editing the field. A right-click displays the popup menu, allowing you to create new, edit or drop the selected field. Using this menu you can also change the field order or create a copy of the field.

See Fields for details.

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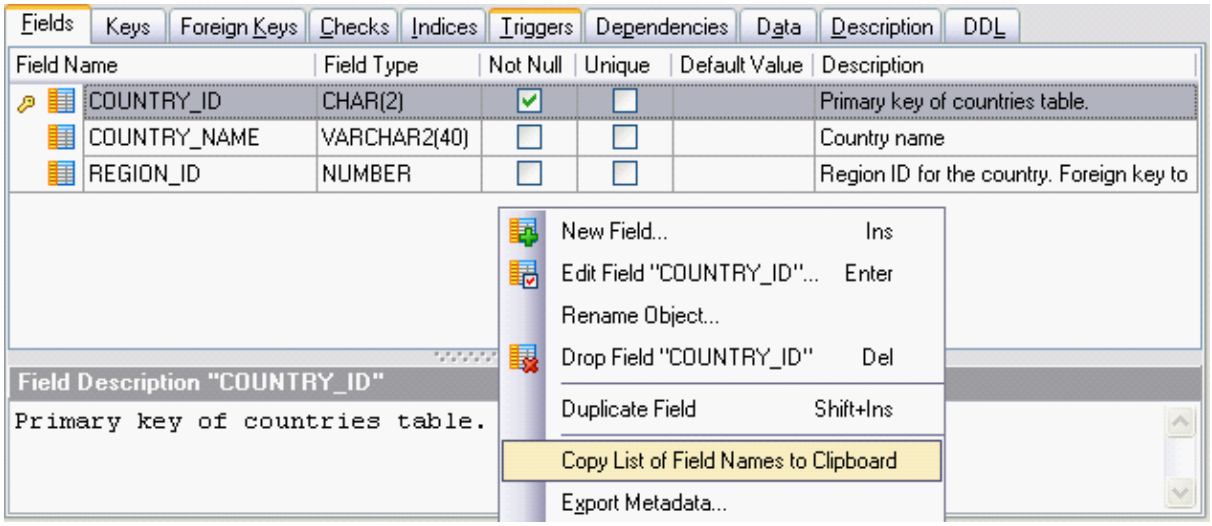
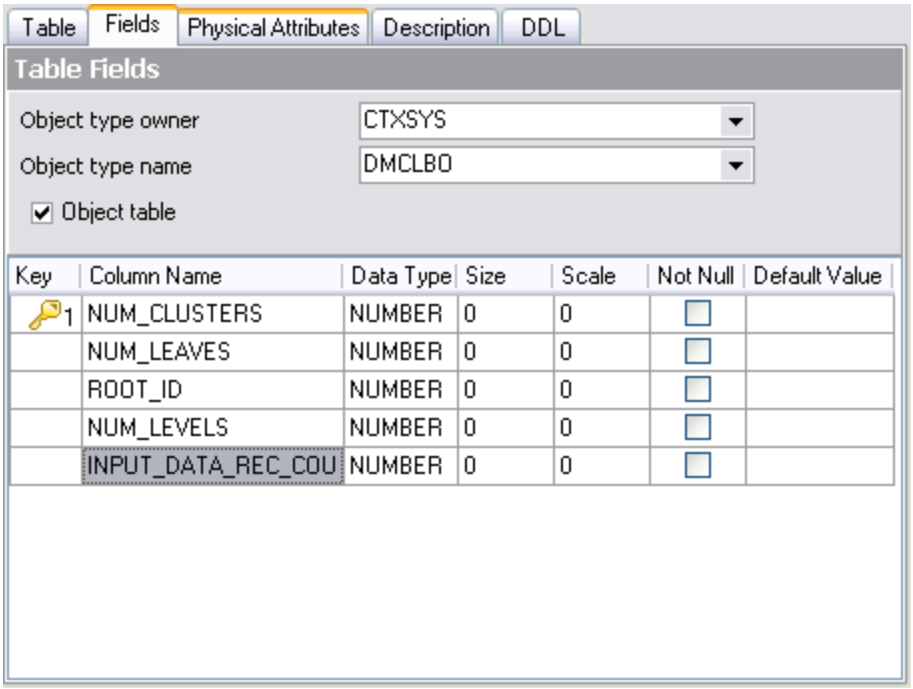


Object table
Defines that an object table which is a table that uses an object type for a column definition should be created. An object table is explicitly defined to hold object instances of a particular type.

The columns of an object table correspond to the top-level attributes of type which is specified at the **Object type name** field.



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5.3.5.2 Table Editor

Table Editor is the basic SQL Manager 2007 for Oracle tool for working with tables. It allows you to create, edit and drop table's fields, indices, foreign keys, and other table subobjects, manage table data, and much more.

To open a table in the **Table Editor**, just double-click it in the Explorer Tree (see Edit Table for details).

- Using navigation bar
- Managing table fields
- Object storage attributes
- Managing table foreign keys
- Managing table checks
- Managing table indices
- Managing table triggers
- Viewing table data
- Editing object description
- Viewing DDL definition
- Browsing object dependencies

See also:

New Table
Field Editor
Foreign Key Editor

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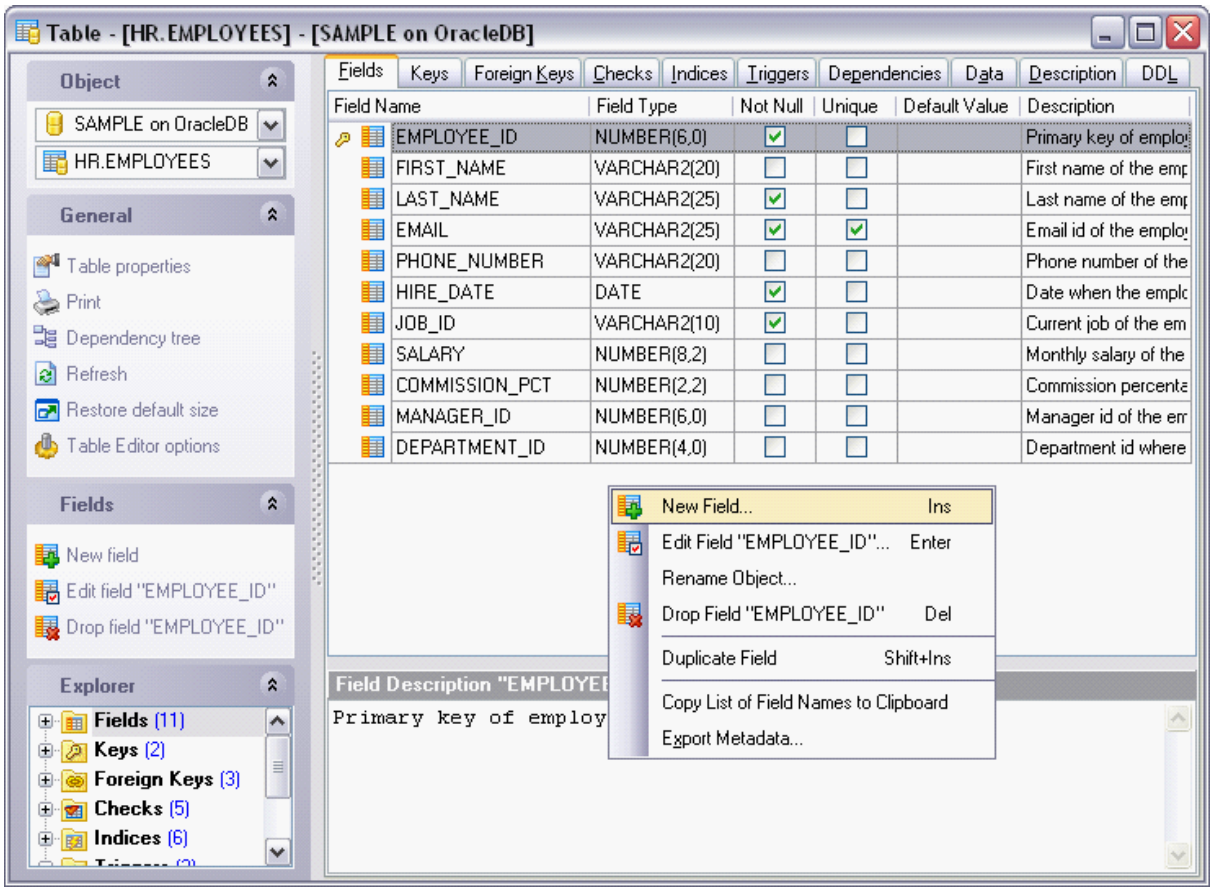

5.3.5.2.1 Using navigation bar

The navigation bar on the left allows you to:

Object bar:
- Select a database and a table for editing within the current window.

General bar:
- View current table Table properties
- Print table metadata
- View Dependency Tree for the table.
- Refresh the content of the active Table Editor tab
- Bring the window to its default size.
- Alter **Table Editor** options.

The next bar displays various actions according to the current page of **Table Editor**.

The **Explorer** bar displays table subobjects in a form of a tree. You can edit a table subobject by double-clicking it.

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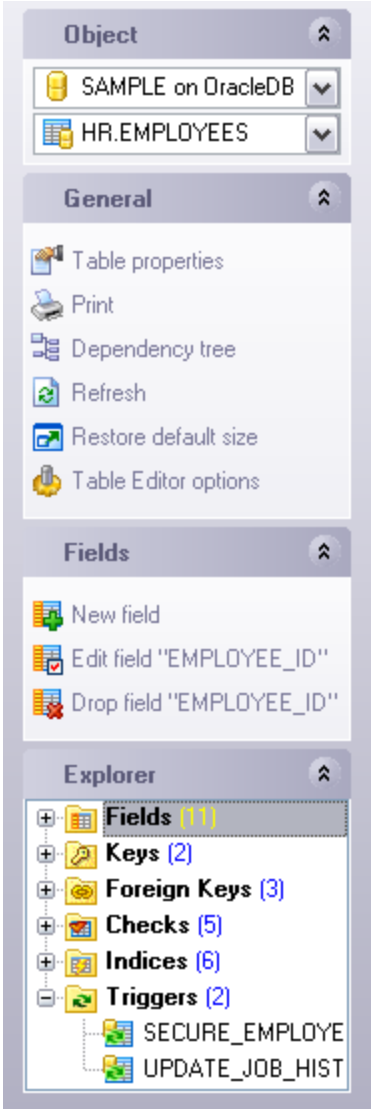

5.3.5.2.2 Managing fields

The **Fields** tab is intended for managing table fields. Double-click a field to open the Field Editor for editing the field. A right-click displays the popup menu, allowing you to create new, edit or drop the selected field. Using this menu you can also change the field order or create a copy of the field.

See Fields for details.

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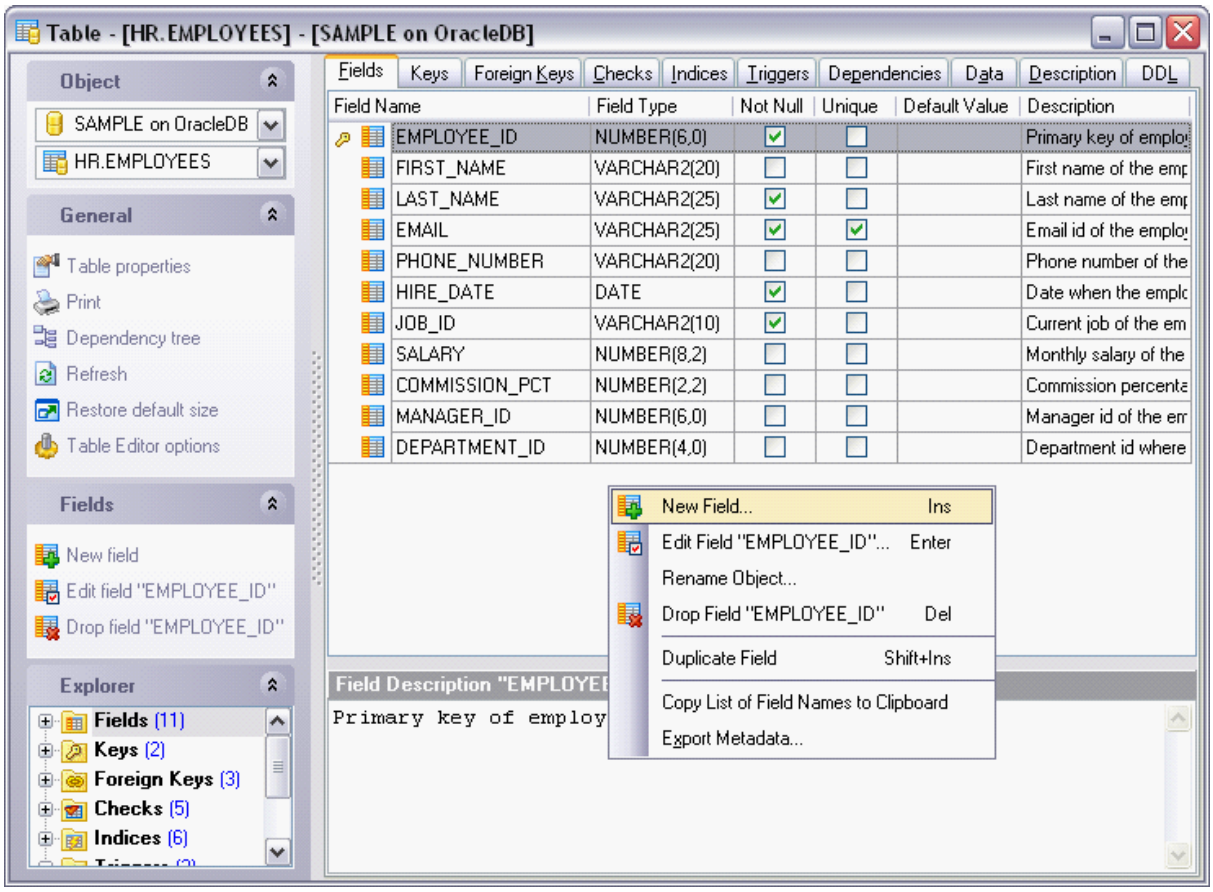

5.3.5.2.3 Managing keys

The **Keys** tab is provided for managing table/view keys. Right-clicking in the tab area allows you to add new, edit, or drop the selected key.

See Keys for details.

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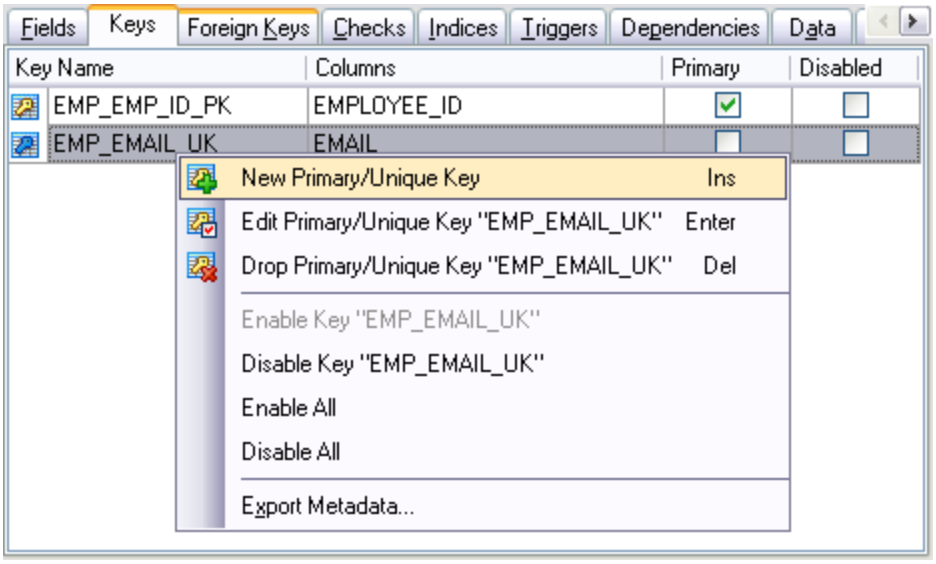

5.3.5.2.4 Managing foreign keys

The **Foreign Keys** tab is provided for managing table foreign keys. Right-clicking in the tab area allows you to add new, edit, or drop the selected foreign key.

See Foreign Keys for details.

5.3.5.2.5 Managing checks

The **Checks** tab is provided for managing table checks. Double-click a check to open the Check Editor for editing the check. A right-click displays the popup menu, allowing you to create new, edit, or drop the selected check.

See Checks for details.

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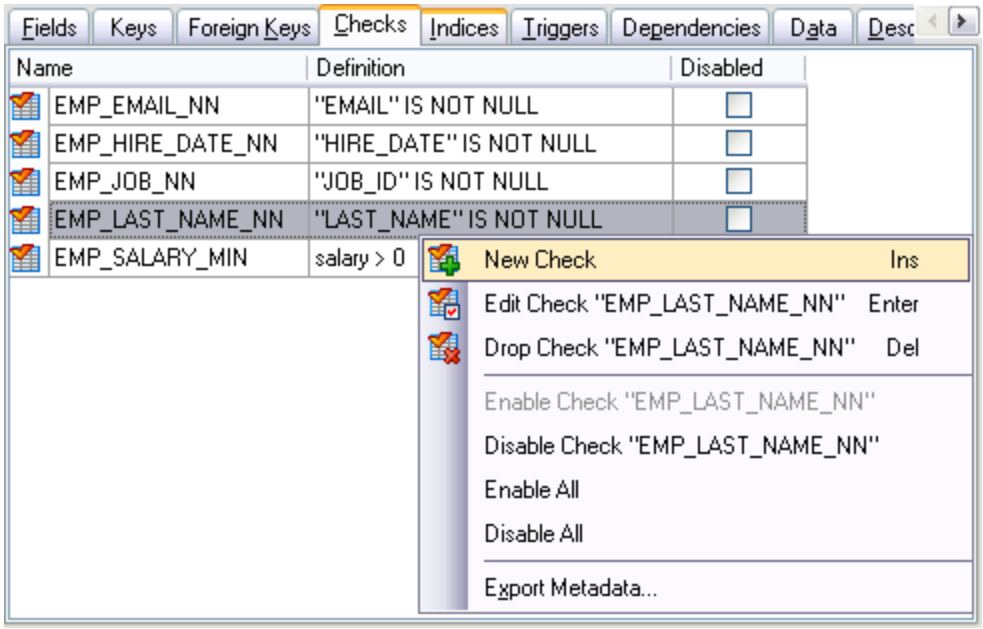
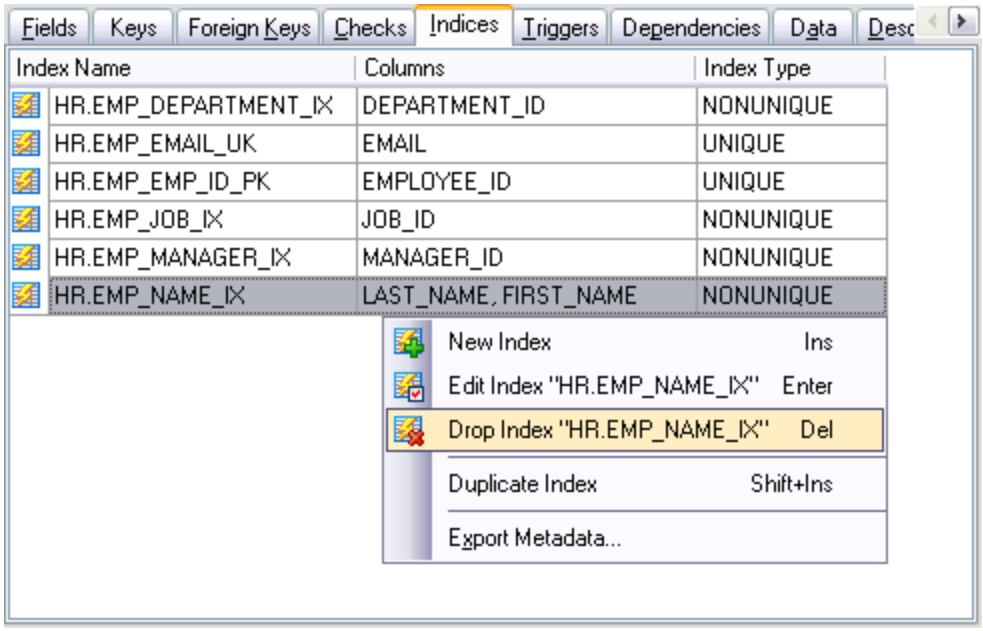


5.3.5.2.6 Managing indices

The **Indexes** tab is provided for managing table indexes. Double-click an index to open the Index Editor for editing the index. A right-click displays the popup menu, allowing you to create new, edit, or drop the selected index.

See Indices for details.



5.3.5.2.7 Managing triggers

The **Triggers** tab is provided for managing table triggers. Double-click a trigger to open the Trigger Editor for editing the trigger. A right-click displays the popup menu, allowing you to create new, edit, or drop the selected trigger.

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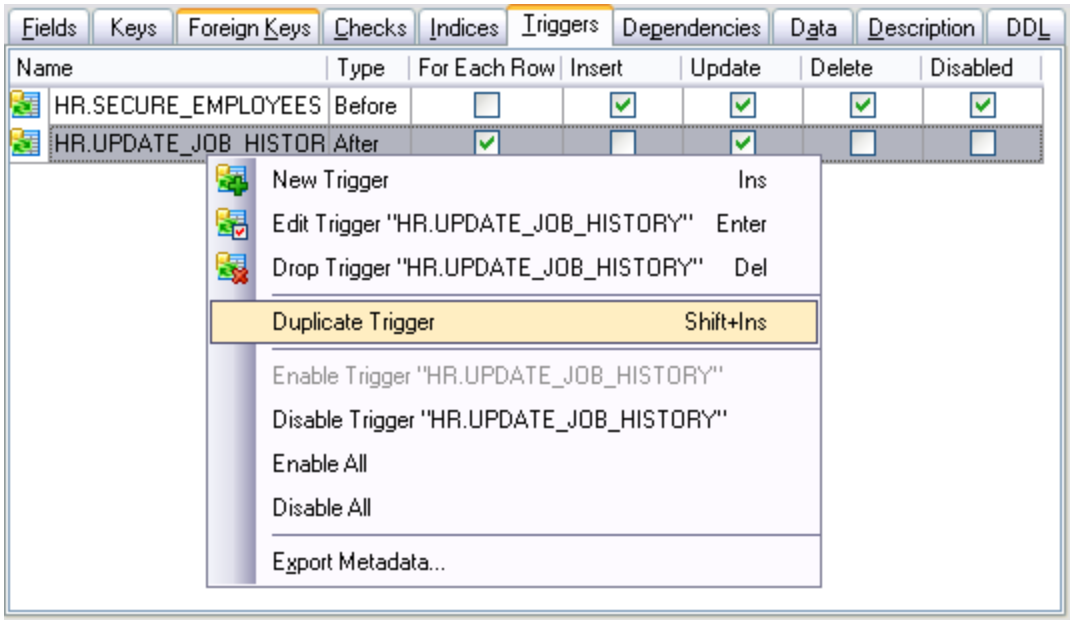
See Triggers for details.



5.3.5.2.8 Viewing table data

The **Data** tab displays the table data as a grid (see Data View for details). The popup menu of this tab and the Data Management navigation bar allow you to Export Data, Import Data, Export as SQL Script.

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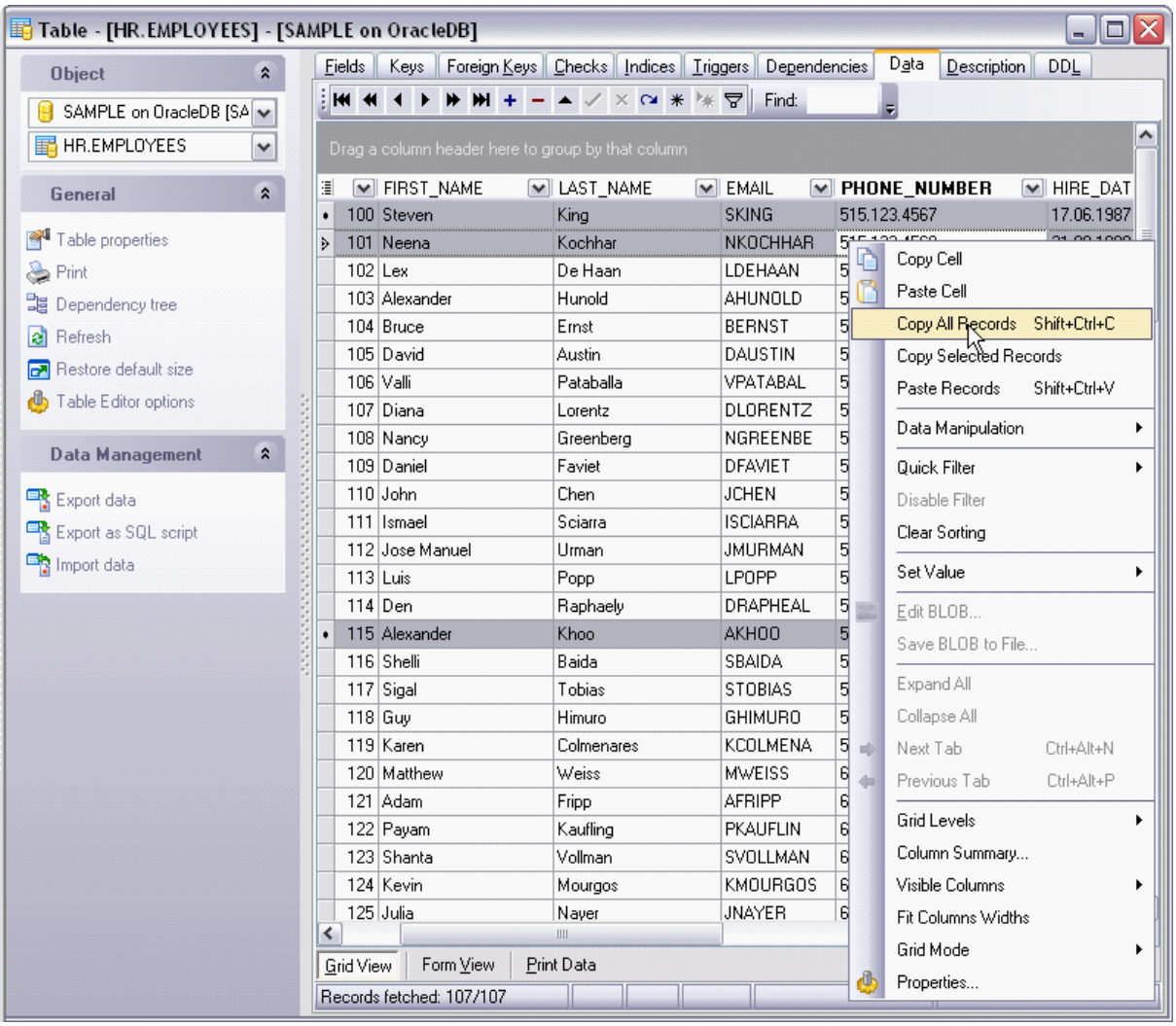

5.3.5.3 Fields

Table fields are managed on the **Fields** tab of the Table Editor.

Add Field

To add a field to the table:

- Open the table in the Table Editor/View Editor.
- Open the **Fields** tab.
- Right-click and select the **New Field** item from the popup menu
- Edit field properties within the Fields Editor Dialog

Edit Field

To edit the table field:

- Open the table in the Table Editor.
- Open the **Fields** tab.

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- Right-click the field and select the **Edit Field** item from the popup menu or simply double-click the field to edit
- Edit field properties within the Fields Editor Dialog

Drop Field

To drop the table field:

- Open the table in the Table Editor.
- Open the **Fields** tab.
- Right-click on the field to drop and select the **Drop Field** item from the popup menu.
- Confirm dropping in the dialog window

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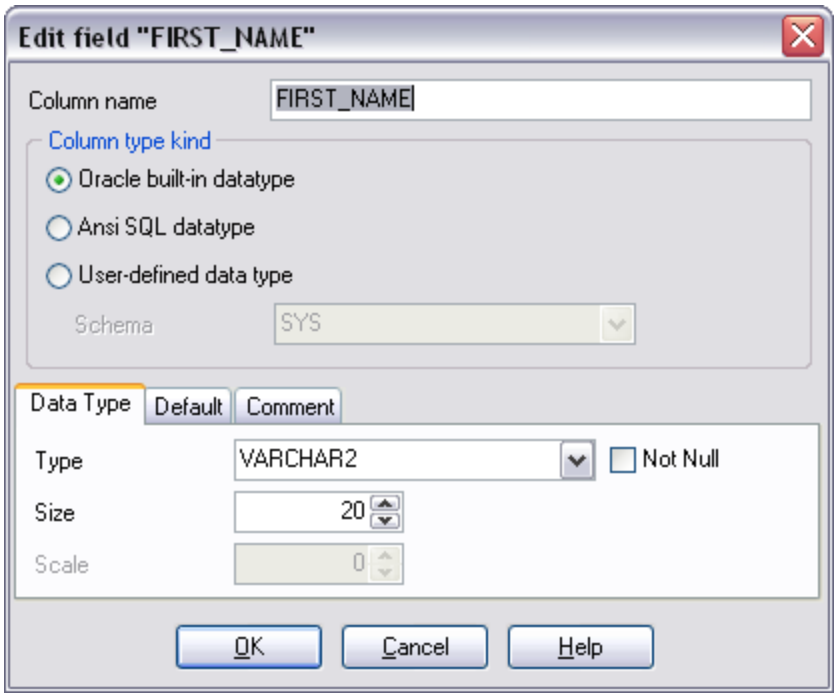
5.3.5.3.1 Field Editor

Field Editor dialog allows you to edit the properties of the table fields.

- Setting field name and type
- Setting field defaults
- Setting field description

See also:
Table Editor



5.3.5.3.1.1 Setting field name and type

Use the **Column name** edit box to set the field name. Note that the name of the field must be unique among all the field names in the table.

The **Data type** tab defines the type of the field data. For **User-defined** data type please specify the schema.

Type
Here you can set the field type by selecting it from the drop-down list of the standard or user-defined data types.

Size

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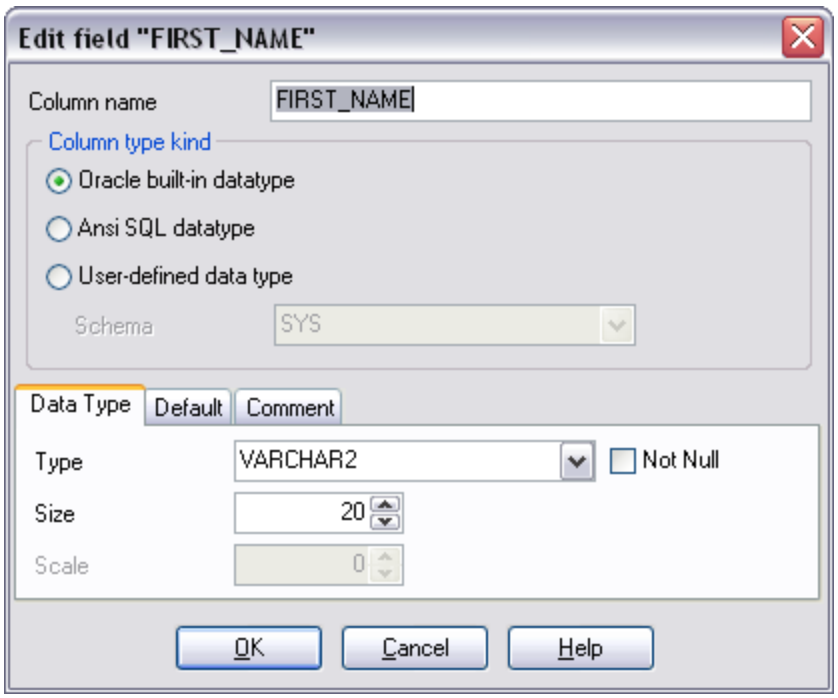
Defines the length of the field value.

Scale
Defines the precision of the field value for float data types.

Not Null
Check this option to prevent the entry of NULL or unknown values in column. **Not null** affects all INSERT and UPDATE operations on a column.



5.3.5.3.1.2 Setting field defaults

The **Default** tab allows you to define the default value for the column. You can either select the default object from the database defaults or define the default value for the column. The second option is unavailable for the **Computed** field type.

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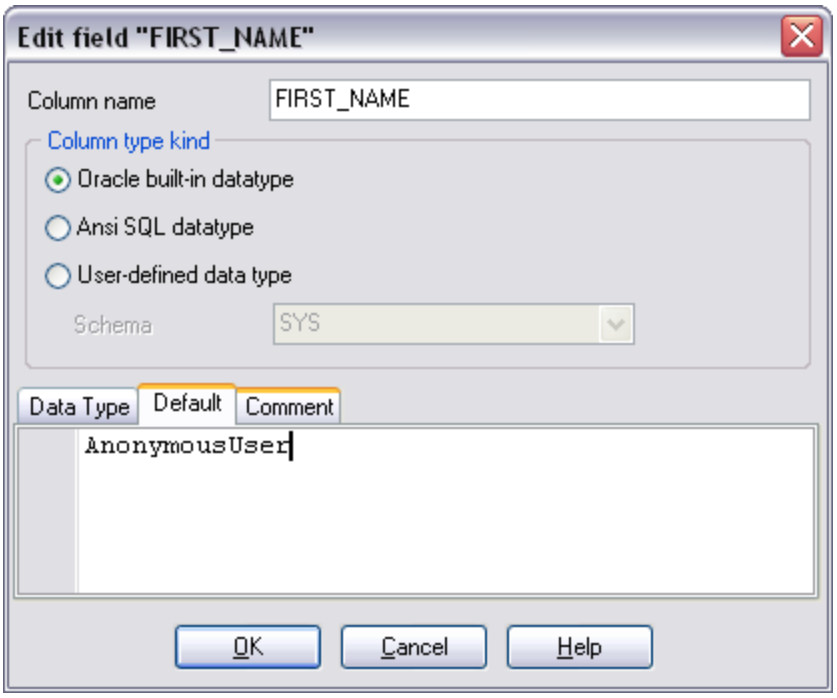
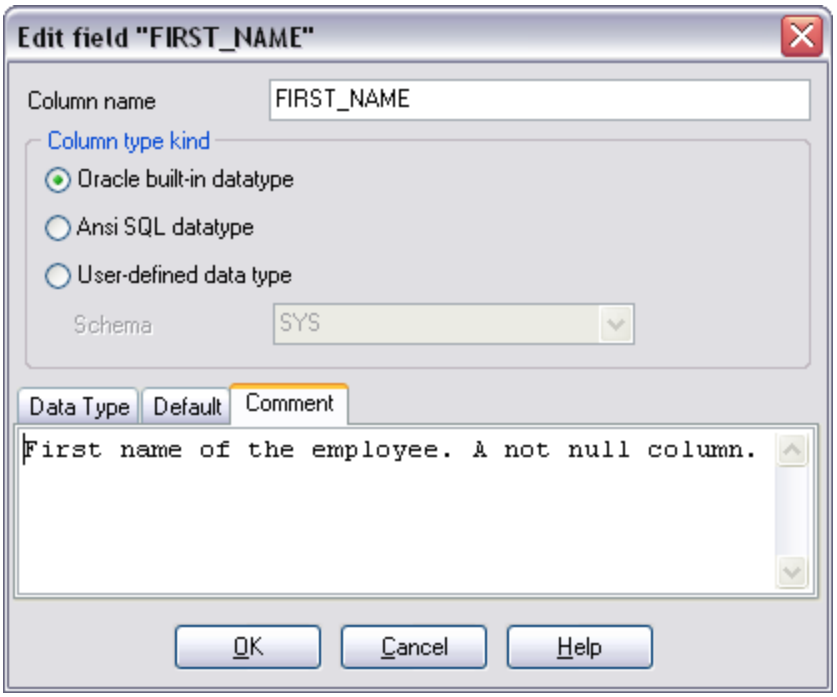


5.3.5.3.1.3 Setting field description

On the **Description** tab you can set the column description that can be any optional text.



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5.3.5.4 Keys

Keys are managed on the **Keys** tab of the Table Editor/View Editor.

A primary key constraint designates a column as the primary key of a table or view. A composite primary key designates a combination of columns as the primary key.

Add Key

To add a key to the table or view:

- Open the table/view in the Table Editor/View Editor.
- Open the **Keys** tab.
- Right-click and select the **Add Key...** item from the popup menu.
- Edit key properties within the Key Editor dialog.

Edit Key

To edit key:

- Open the table/view in the Table Editor/View Editor.
- Open the **Keys** tab.
- Right-click the key and select the **Edit Key** item from the popup menu or simply double-click the key to edit.
- Edit key properties within the Key Editor Dialog.

Drop Key

To drop the key:

- Open the table or view in the Table Editor/View Editor.
- Open the **Keys** tab.
- Right-click the key to drop and select the **Drop Key** item from the popup menu.
- Confirm dropping in the dialog window.

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5.3.5.4.1 Key Editor

The **Key Editor** allows you to edit the properties of the key. It opens when you create a new key or edit the existing one (see Create Key and Edit Key for details).

- Using navigation bar
- Editing key definition
- Editing object description
- Viewing DDL definition

See also:

Table Editor
Index Editor
Check Editor
Trigger Editor

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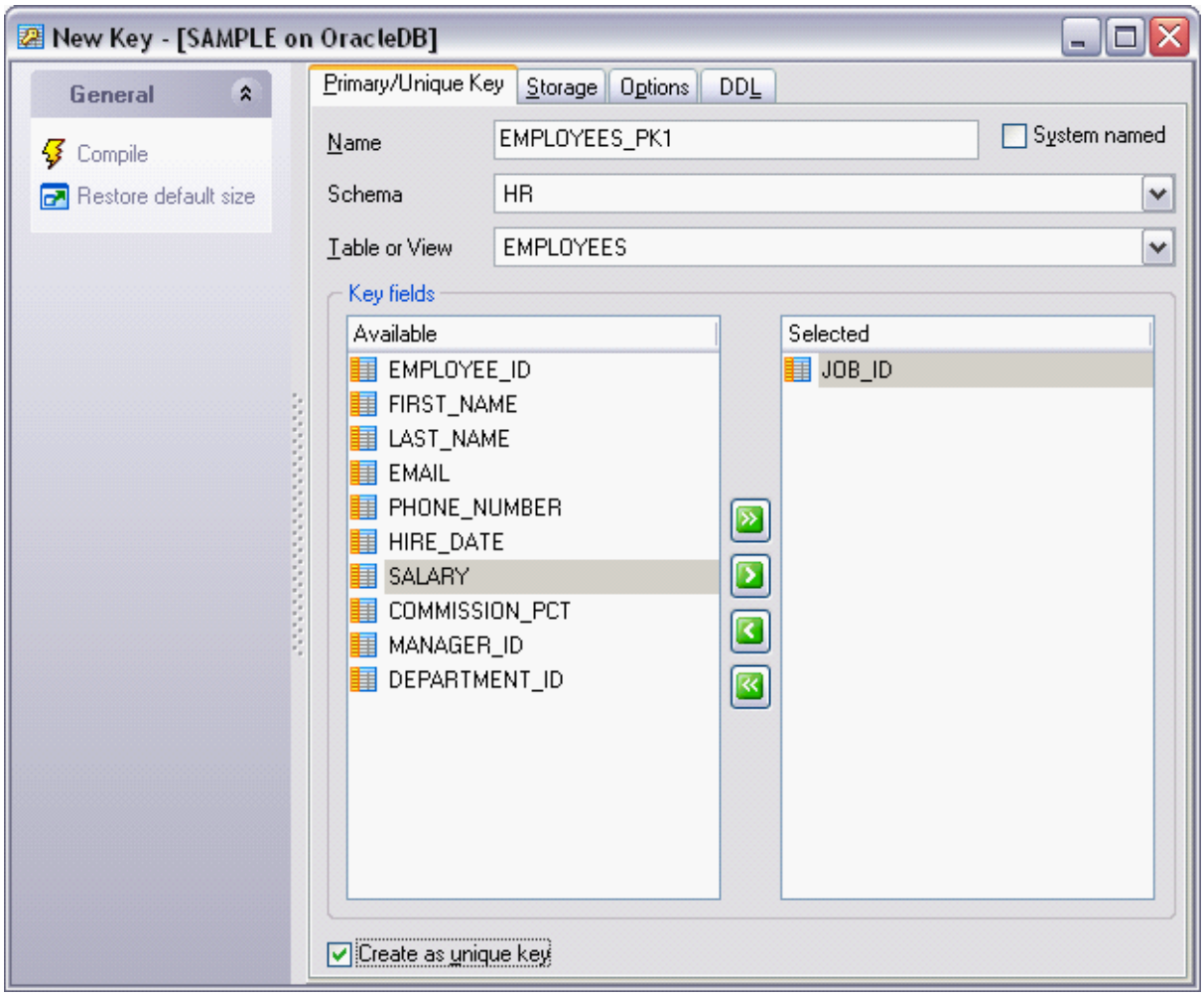

Availability:

Windows Full	Yes
Windows Lite	Yes

5.3.5.4.1.1 Using navigation bar

The navigation bar on the left allows you to:

General bar:
- Compile the current key definition
- Refresh the content of the active tab
- Bring the window to its default size.

The next bar displays various actions according to the current page of **Key Editor**.

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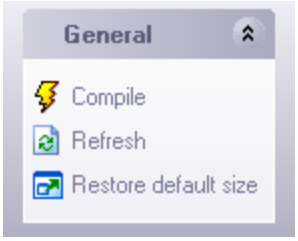

5.3.5.4.1.2 Editing Key definition

Key Editor allows you to select fields for the key, when you add or edit a foreign key to the table or view with the Table Editor/View Editor.

Name
Specify the key name or enable the **System named** option. In this case Oracle will generate the check name automatically when compiling check definition.

Schema
Is the name of the schema to which the object belongs.

Table
Select the table or view for which the key is created.

To include fields to the key, move the fields from the **Available Fields** list to the **Included Fields** by double-clicking or dragging them, both in the **Table fields** group and in the **Foreign table fields** group. To remove the fields from the key, move them back in the same way. You can also use the arrow buttons to move the selected fields (multiple fields are selected by Ctrl or Shift).

Create as unique key
Designates a column as a unique key.

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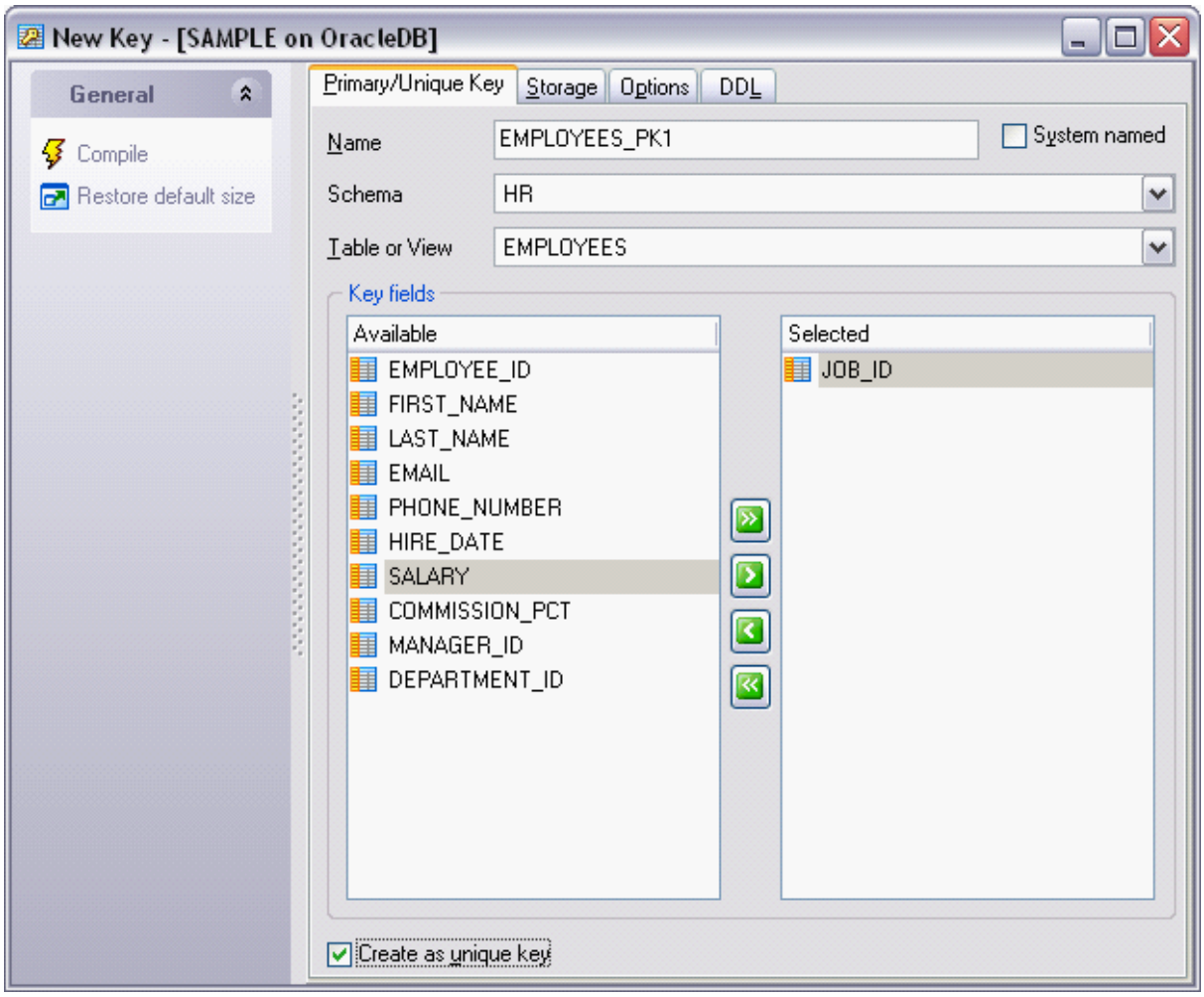

5.3.5.4.1.3 Setting Key options

Status
Specify **Disabled** to disable the integrity constraint. Set the option to **Enabled** if you want the constraint to be applied to the data in the table or view.

Validation
Correlates with the corresponding server constraint behaviour parameters - **VALIDATE** and **NOVALIDATE**.

Deferrable
Set the option to **Initially immediate** to indicate that Oracle should check this constraint at the end of each subsequent SQL statement. Specify **Initially deferred** to indicate that Oracle should check this constraint at the end of subsequent transactions.

Rely
Correlates with the corresponding server constraint behaviour parameters - **RELY** and **NORELY**.

Exceptions processing

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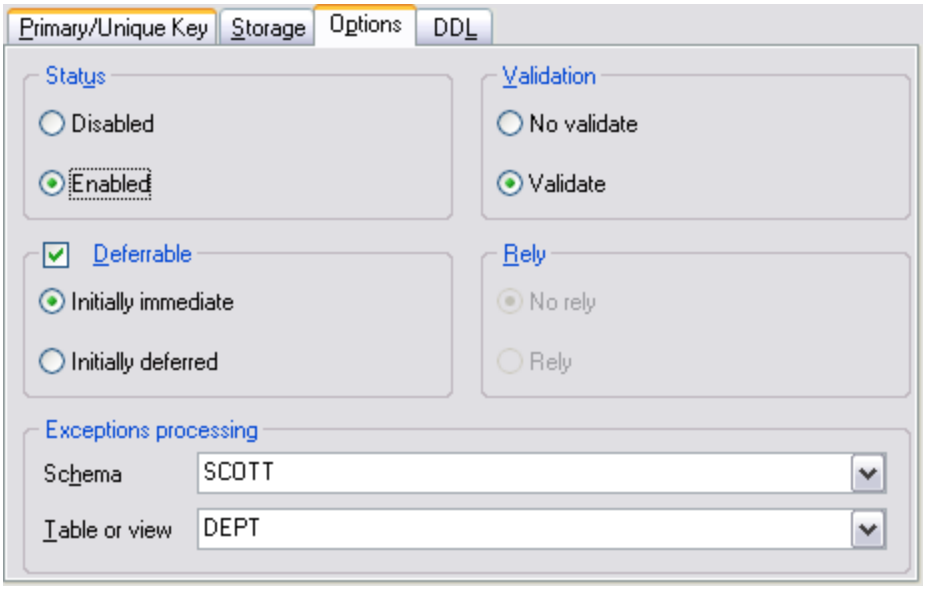
This group lets you define exception handling (e.g. causes Oracle to write to the exceptions table information about any rows in the current table that violate the constraint). Specify the schema and the name of the exceptions table.

Note: you cannot process exceptions a view constraint in this way.



5.3.5.5 Foreign Keys

Table/view foreign keys are managed on the **Foreign Keys** tab of the Table Editor/View Editor.

A foreign key constraint (also called a referential integrity constraint) designates a column as the foreign key and establishes a relationship between that foreign key and a specified primary or unique key, called the referenced key. A composite foreign key designates a combination of columns as the foreign key.

Add Foreign Key

To add a foreign key to the table:

- Open the table or view in the Table Editor/View Editor.
- Open the **Foreign Keys** tab.
- Right-click and select the **Add Foreign Key...** item from the popup menu.
- Edit foreign key properties within the Foreign Key Editor dialog.

Edit Foreign Key

To edit foreign key:

- Open the table or view in the Table Editor/View Editor.
- Open the **Foreign Keys** tab.
- Right-click the foreign key and select the **Edit Foreign Key** item from the popup menu

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or simply double-click the key to edit.
- Edit foreign key properties within the Foreign Key Editor Dialog.

Drop Foreign Key

To drop the foreign key:

- Open the table/view in the Table Editor/View Editor.
- Open the **Foreign Keys** tab.
- Right-click the key to drop and select the **Drop Foreign Key** item from the popup menu.
- Confirm dropping in the dialog window.

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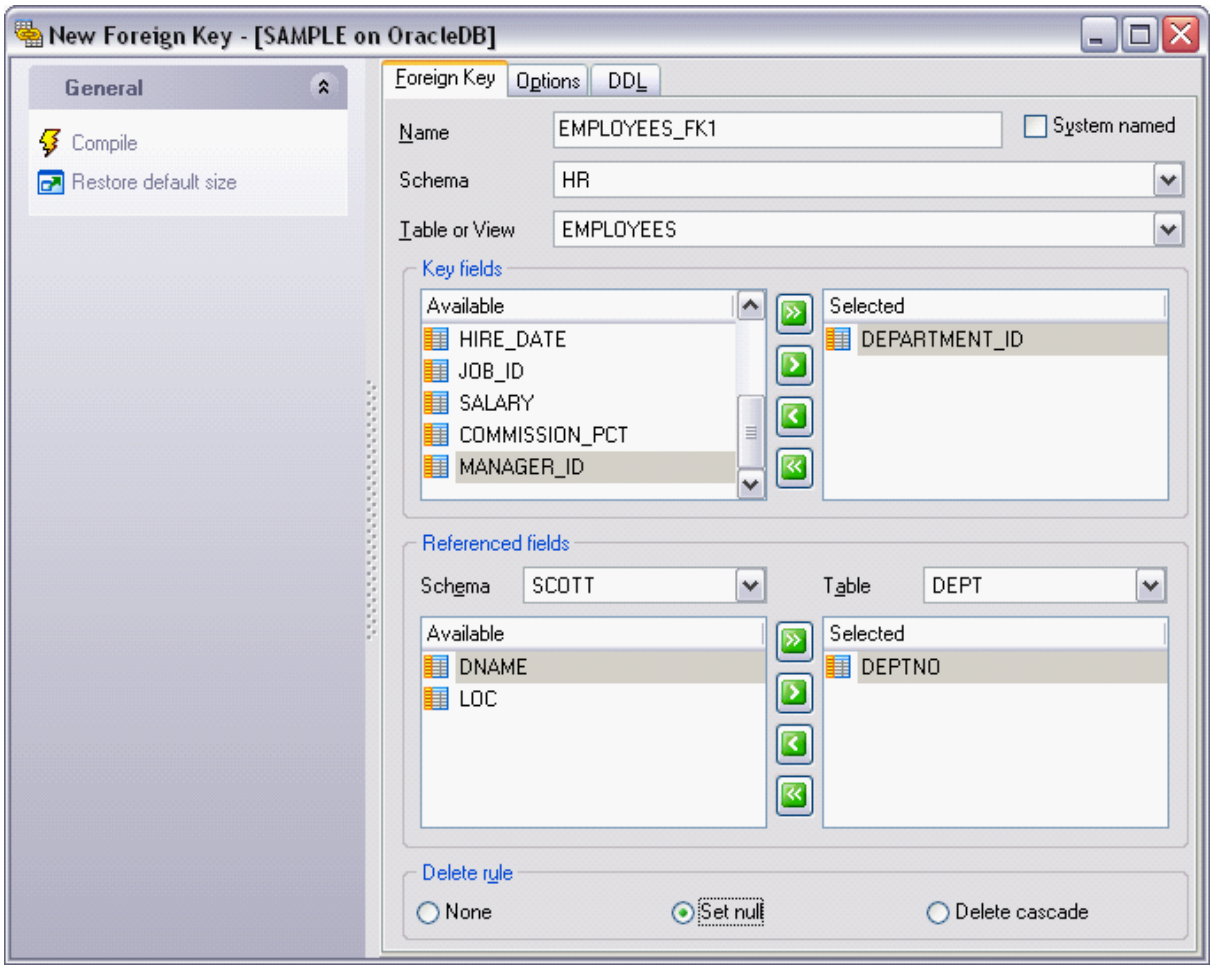
5.3.5.5.1 Foreign Key Editor

The **Foreign Key Editor** allows you to edit the foreign key fields and its other properties. It opens when you create a new foreign key or edit the existing one (see Create Foreign Key and Edit Foreign Key for details).

- Using navigation bar
- Editing foreign key definition
- Editing object description
- Viewing DDL definition

See also:

Table Editor
Index Editor
Check Editor
Trigger Editor



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Availability:	
Windows Full	Yes
Windows Lite	Yes

5.3.5.5.1.1 Using navigation bar

The navigation bar on the left allows you to:

General bar:
- Compile the current foreign key definition
- View Dependency Tree for the foreign key.
- Refresh the content of the active Foreign Key Editor tab
- Bring the window to its default size.

The next bar displays various actions according to the current page of **Foreign Key Editor**.

5.3.5.5.1.2 Editing foreign key definition

Foreign Key Editor allows you to select fields for the foreign key, when you add or edit a foreign key to the table or view with the Table Editor/View Editor.

Name
Specify the foreign key name or enable the **System named** option. In this case Oracle will generate the check name automatically when compiling check definition.

Schema
Is the name of the schema to which the object belongs.

Table
Select the table or view for which the foreign key is created.

To include fields to the key, move the fields from the **Available Fields** list to the **Included Fields** by double-clicking or dragging them, both in the **Table fields** group and in the **Foreign table fields** group. To remove the fields from the key, move them back in the same way. You can also use the arrow buttons to move the selected fields (multiple fields are selected by Ctrl or Shift).

Delete rule:

- None
  Produce an error indicating that the deletion or update would create a foreign key constraint violation. If the constraint is deferred, this error will be produced at constraint check time if there still exist any referencing rows. This is the default

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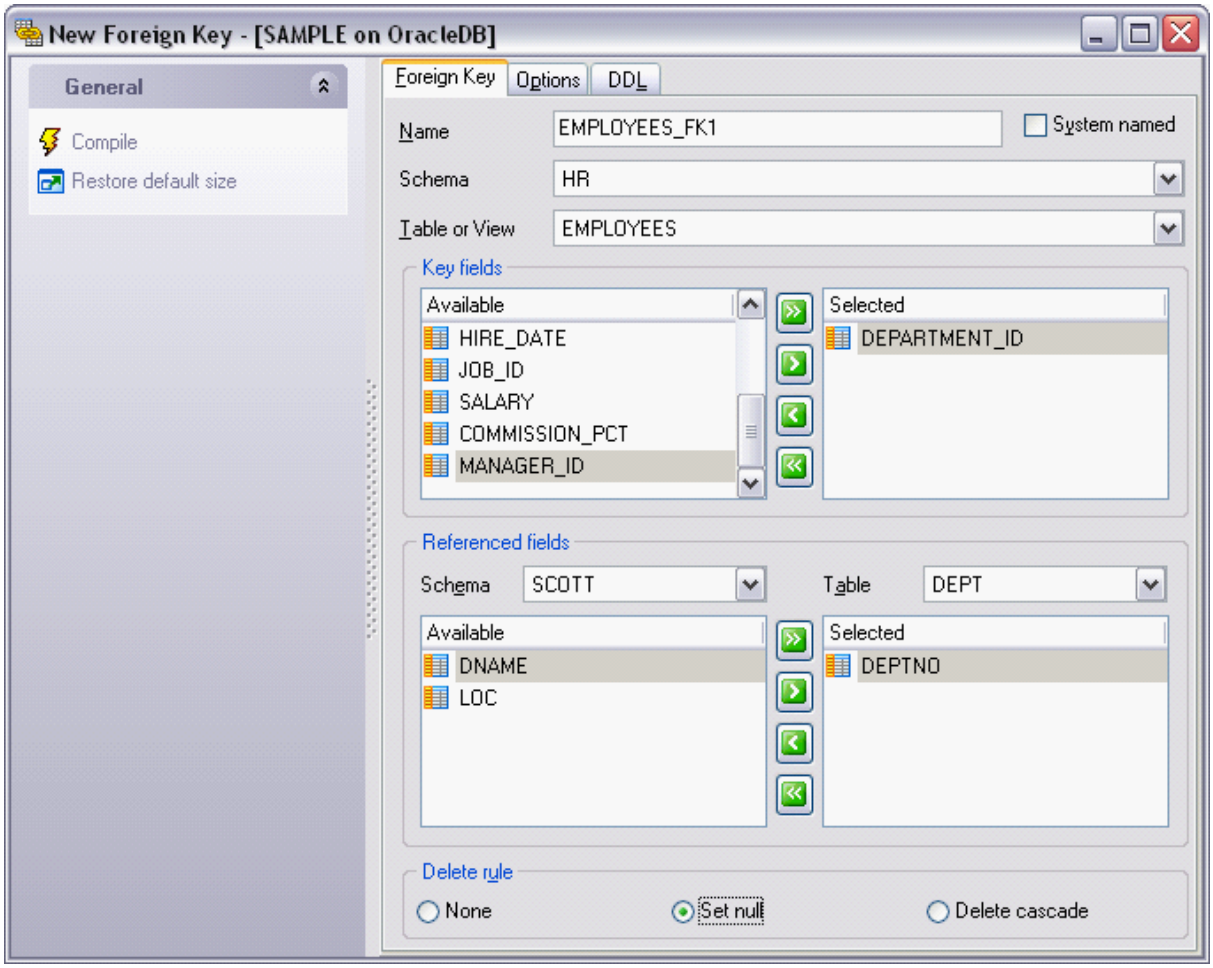
action.

- Set Null
  Set the referencing column(s) to null.

- Cascade
  Delete any rows referencing the deleted row, or update the value of the referencing column to the new value of the referenced column, respectively.

To get information on the foreign key options see Setting key options.



5.3.5.6 Checks

Check specifies an expression producing a Boolean result which new or updated rows must satisfy for an insert or update operation to succeed. Expressions evaluating to TRUE or UNKNOWN succeed. Should any row of an insert or update operation produce a FALSE result an error exception is raised and the insert or update does not alter the database. A check constraint specified as a column constraint should reference that column's value only, while an expression appearing in a table constraint may reference multiple columns.

Table checks are managed on the **Checks** tab of the Table Editor.

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Add Check

To add a check to the table:

- Open the table in the Table Editor.
- Open the **Checks** tab.
- Right-click and select the **Add Check...** item from the popup menu.
- Edit check properties within the Check Editor dialog.

Edit Check

To edit check:

- Open the table in the Table Editor.
- Open the **Checks** tab.
- Right-click the check and select the **Edit Check** item from the popup menu or simply double-click the key to edit.
- Edit check properties within the Check Editor Dialog.

Drop Check

To drop the check:

- Open the table in the Table Editor.
- Open the **Checks** tab.
- Right-click the key to drop and select the **Drop Check** item from the popup menu.
- Confirm dropping in the dialog window.

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5.3.5.6.1 Check Editor

The **Check Editor** allows you to edit check properties. It opens when you create a new check or edit the existing one (see Create Foreign Key and Edit Foreign Key for details).

- Using navigation bar
- Editing check definition
- Editing object description
- Viewing DDL definition

See also:

Table Editor
Index Editor
Foreign Key Editor
Trigger Editor

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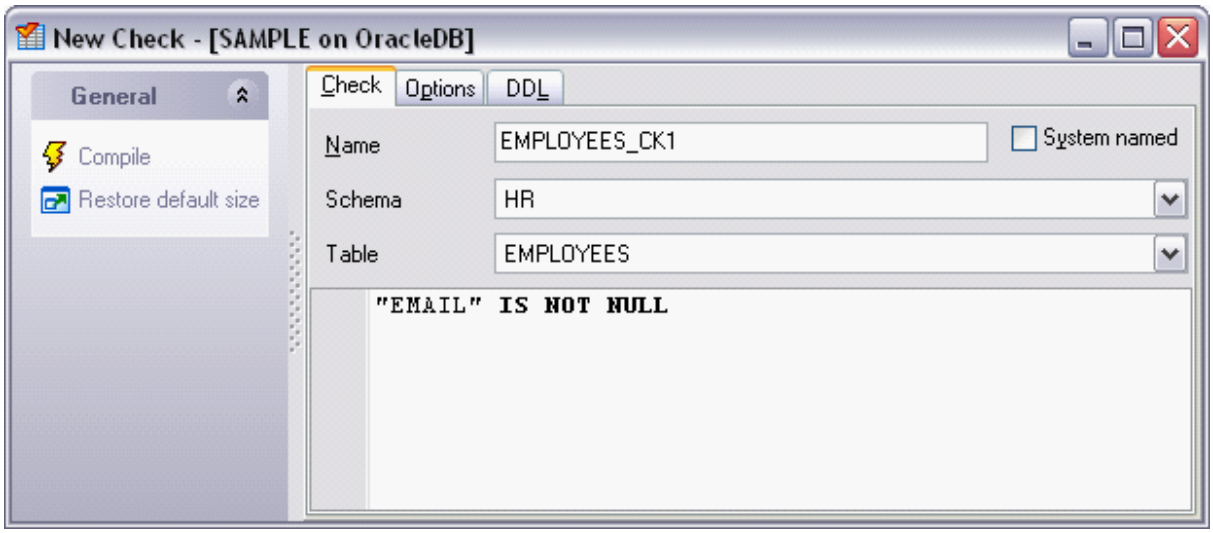

5.3.5.6.1.1 Using navigation bar

The navigation bar on the left allows you to:

General bar:
- Compile the current check definition
- View Dependency Tree for the check.
- Refresh the content of the active Check Editor tab
- Bring the window to its default size.

The next bar displays various actions according to the current page of **Check Editor**.

5.3.5.6.1.2 Editing check definition

The **Check** tab allows you to enter condition for the check.

Name
Set the check name or enable the **System named** option. In this case Oracle will generate the check name automatically when compiling check definition.

Schema
Is the name of the schema to which the object belongs.

Table
Select the table for the check from the drop-down list of the database tables.

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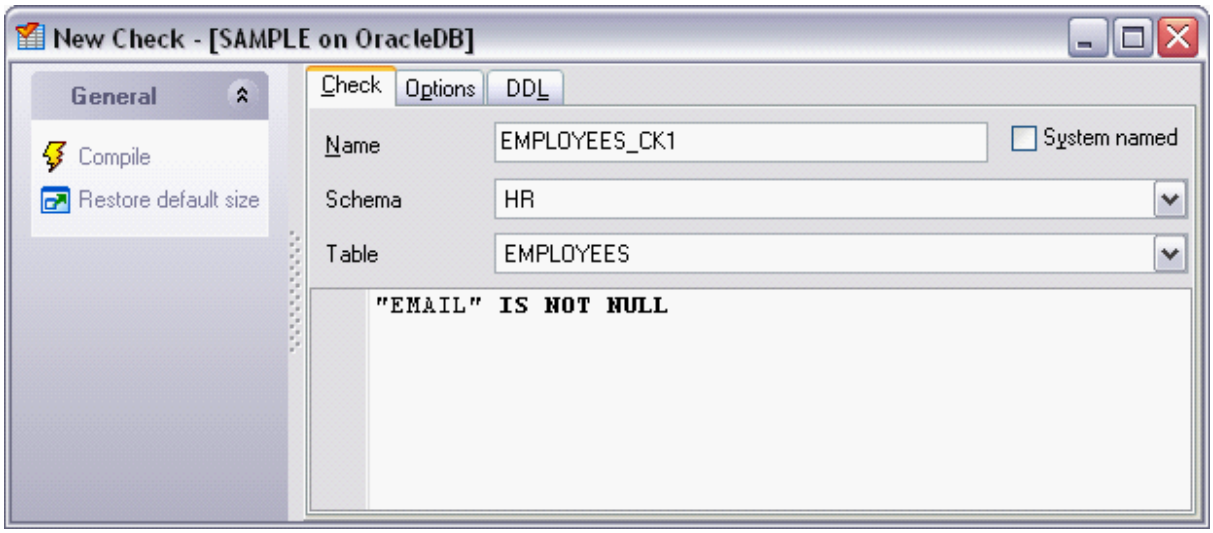

5.3.5.7 Indices

Table indices are managed on the **Indices** tab of the Table Editor.

Create Index

To add an index to the table:

- Open the table in the Table Editor.
- Open the **Indices** tab.
- Right-click and select the **New Index** item from the popup menu.
- Edit the index properties within the Index Editor.

Edit Index

To edit the table index:

- Open the table in the Table Editor.
- Open the **Indices** tab.
- Right-click the index and select the **Edit Index <Index_Name>** or simply double-click the index to edit.
- Edit the index properties within the Index Editor.

Drop Index

To drop the table index:

- Open the table in the Table Editor.
- Open the **Indices** tab.
- Right-click on the index to drop and select the **Drop Index** item from the popup menu.
- Confirm dropping in the dialog window.

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5.3.5.8 Triggers

A table **trigger** is a stored PL/SQL block associated with a table.

Table/view triggers are managed on the **Triggers** tab of the Table Editor/View Editor.

Create Trigger

To add a trigger to the table or view:

- Open the table or view in the Table Editor/View Editor.
- Open the **Triggers** tab.
- Right-click and select the **New Trigger** item from the popup menu.

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- Edit the trigger properties within the Trigger Editor.

Edit Trigger

To edit the trigger:

- Open the table/view in the Table Editor/View Editor.
- Open the **Triggers** tab.
- Right-click the trigger and select the **Edit Trigger <Trigger_Name>** or simply double-click the trigger to edit.
- Edit the trigger properties within the Trigger Editor.

Drop Trigger

To drop the trigger:

- Open the table or view in the Table Editor/View Editor.
- Open the **Triggers** tab.
- Right-click on the trigger to drop and select the **Drop Trigger** item from the popup menu.
- Confirm dropping in the dialog window.

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5.3.6 Views

A **view** is a logical table based on one or more tables or views. A view contains no data itself. The tables upon which a view is based are called base tables.

Create view

To create a new view:

- Select the **Database | New Object...** menu item.
- Select **View** in the New Object dialog.
- Edit view definition within the View Editor.

Hint: To create new view you can also right-click the **Views** node of the explorer tree and select the **New View...** item from the popup menu. Or you can click the **Create View** button on the toolbar of Table Editor.

Another way to create a view is building a query in the Visual Query Builder tool (click the **Create View** button on the toolbar after finishing building).

To create a new view with the same properties as one of the existing views has:

- Select the **Database | Duplicate Object...** menu item.
- Follow the instructions of the Duplicate Object Wizard.

Edit view

To edit the existing view (manage its fields, indexes, data, etc):

- Select the view for editing in the explorer tree (type the first letters of the view name for quick search).
- Right-click and select the **Edit View <View_Name>** item from the popup menu or simply double-click the view.
- Edit view definition and data on the appropriate tabs of the View Editor.

To change the name of the view:

- Select the view to rename in the explorer tree.

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- Right-click and select the **Rename View <View_Name>** item from the popup menu.
- Edit view name in the dialog window.

Drop view

To drop a view:

- Select the view to drop in the explorer tree.
- Right-click and select the **Drop View <View_Name>** item from the popup menu.
- Confirm dropping in the dialog window.

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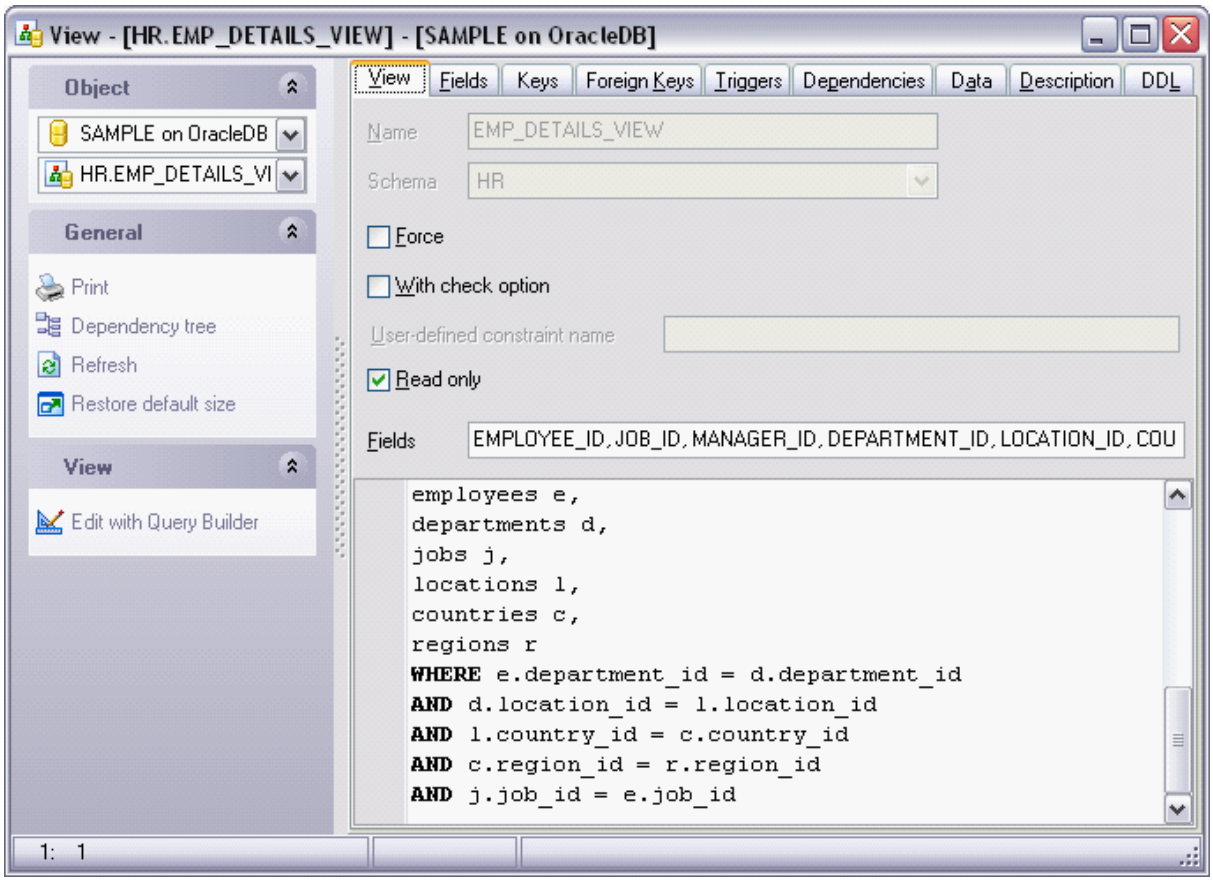
5.3.6.1 View Editor

The **View Editor** allows you to create new view and edit the existing view definition (view name and the SELECT statement it implements). It opens when you create a new view or edit the existing one (see Create View and Edit View for details).

To open a view in the **View Editor**, double-click it in the explorer tree.

- Using navigation bar
- Editing View definition
- Viewing fields
- Managing keys
- Managing foreign keys
- Managing triggers
- Viewing data
- Editing object description
- Viewing DDL definition
- Browsing object dependencies



5.3.6.1.1 Using navigation bar

The navigation bar on the left allows you to:

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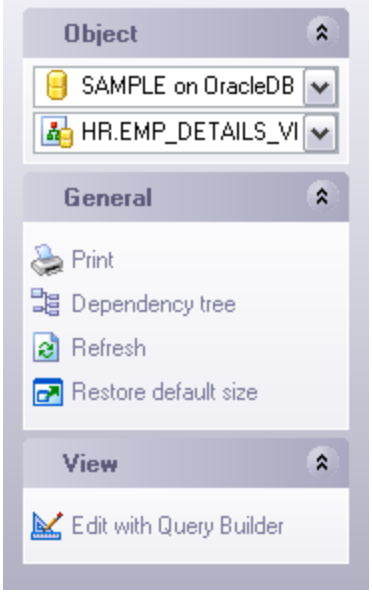
Object bar:
Select a database and a view for editing within the current window.

General bar:
- Compile the current view
- Print metadata of the current view
- View Dependency Tree for the view
- Refresh the content of the active tab
- Bring the window to its default size.

The next bar displays various actions according to the current page of **View Editor**.



5.3.6.1.2 Editing View definition

Name
Specify the name of the view.

Schema
Specify the schema to contain the view.

Force
Check this option if you want to create the view regardless of whether the base tables of the view or the referenced object types exist or the owner of the schema containing the view has privileges on them.

With check option
When enabled, this option indicates that Oracle prohibits any changes to the table or view that would produce rows that are not included in the subquery (you can set it in the **User defined constraint name** field).

Read only
When checked, this option indicates that the view cannot be updated.

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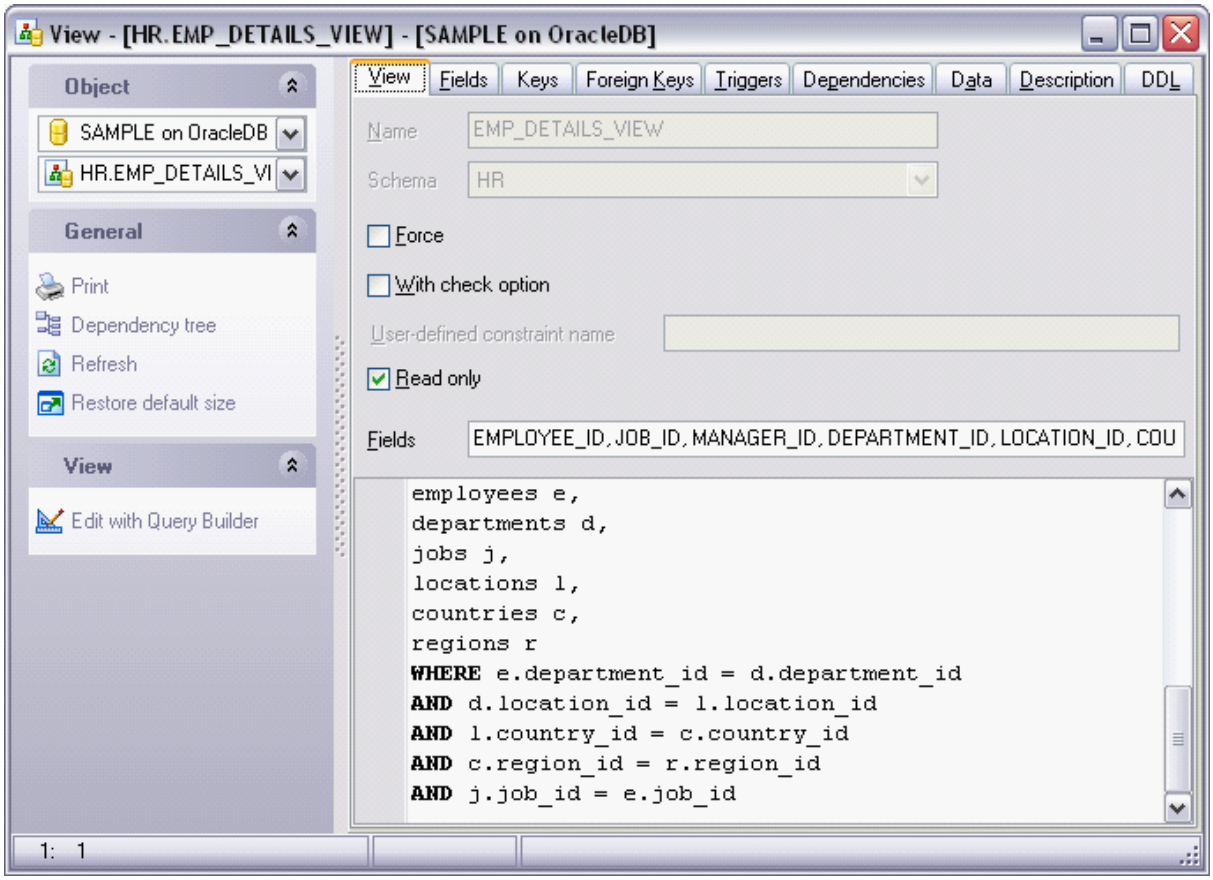
You can give new names to the view fields in the **Fields** area separating them with a comma.



5.3.6.1.3 Viewing view fields

The **Fields** tab is provided for viewing fields represented in the view.

A right-click displays the popup menu, allowing you to export field name list or copy it to clipboard.

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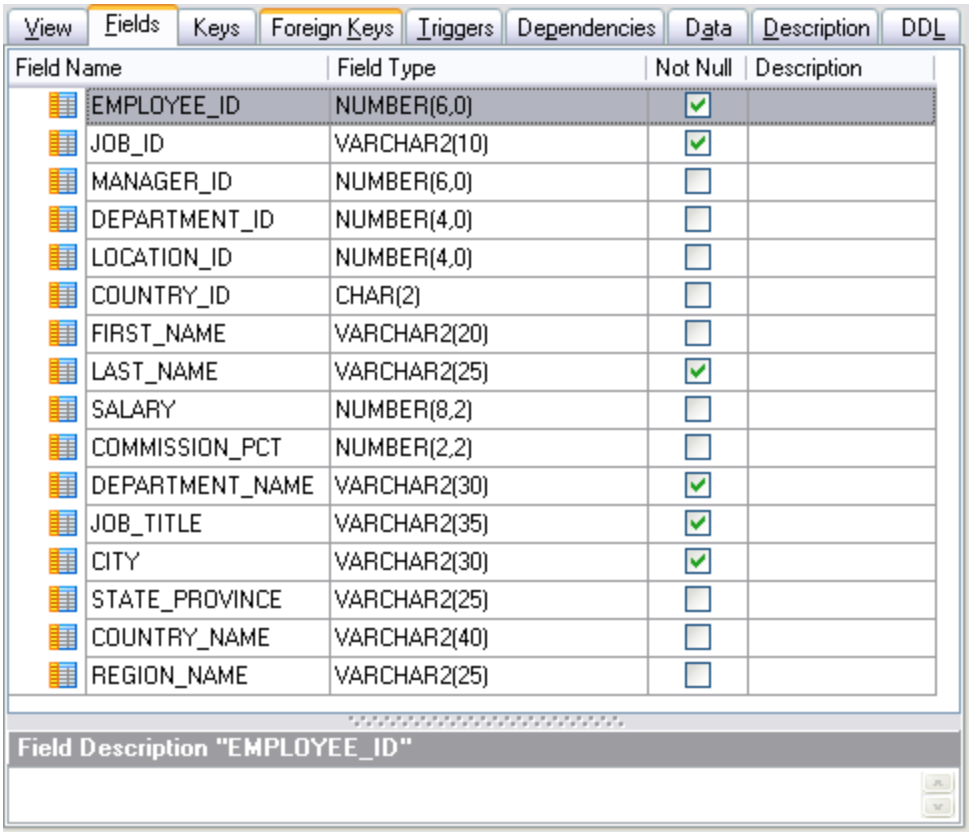
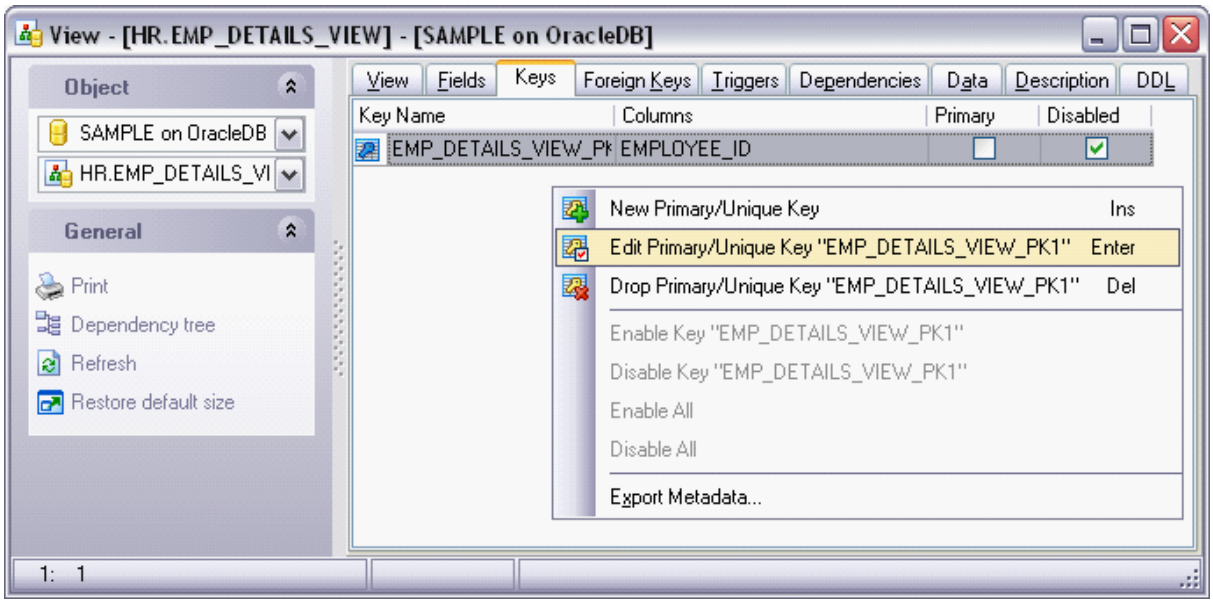


5.3.6.1.4 Managing keys

The **Keys** tab is provided for managing table/view keys. Double-click a key to open the Key Editor for editing it. Right-clicking in the tab area allows you to add new, edit, or drop the selected key.

See Keys for details.



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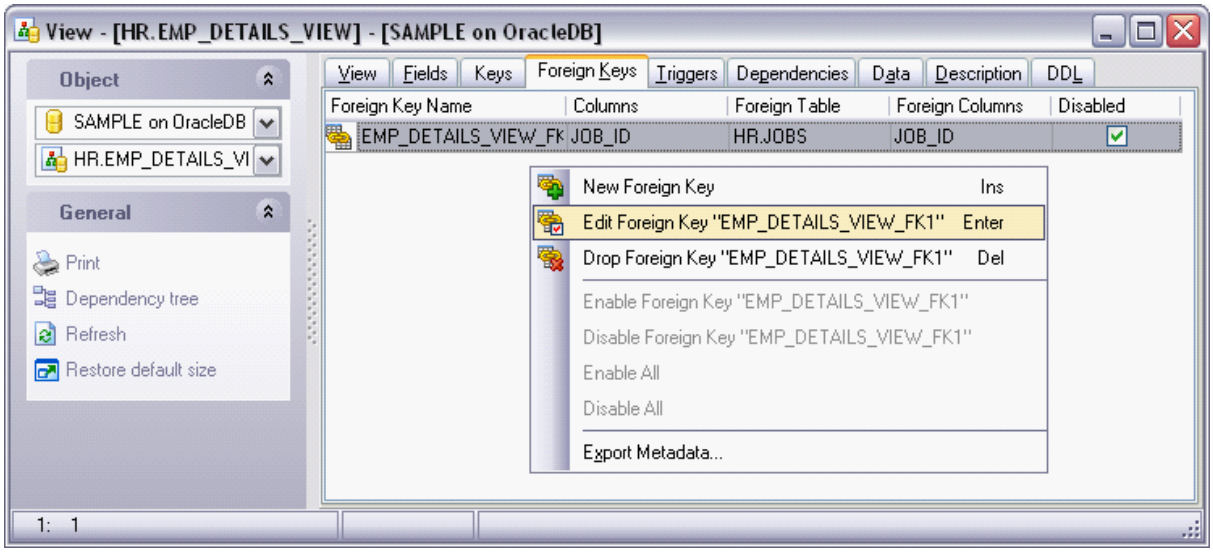
5.3.6.1.5 Managing foreign keys

The **Foreign Keys** tab is provided for managing table/view foreign keys. Double-click a trigger to open the Foreign Key Editor for editing the foreign key. Right-clicking in the tab area allows you to add new, edit, or drop the selected foreign key.

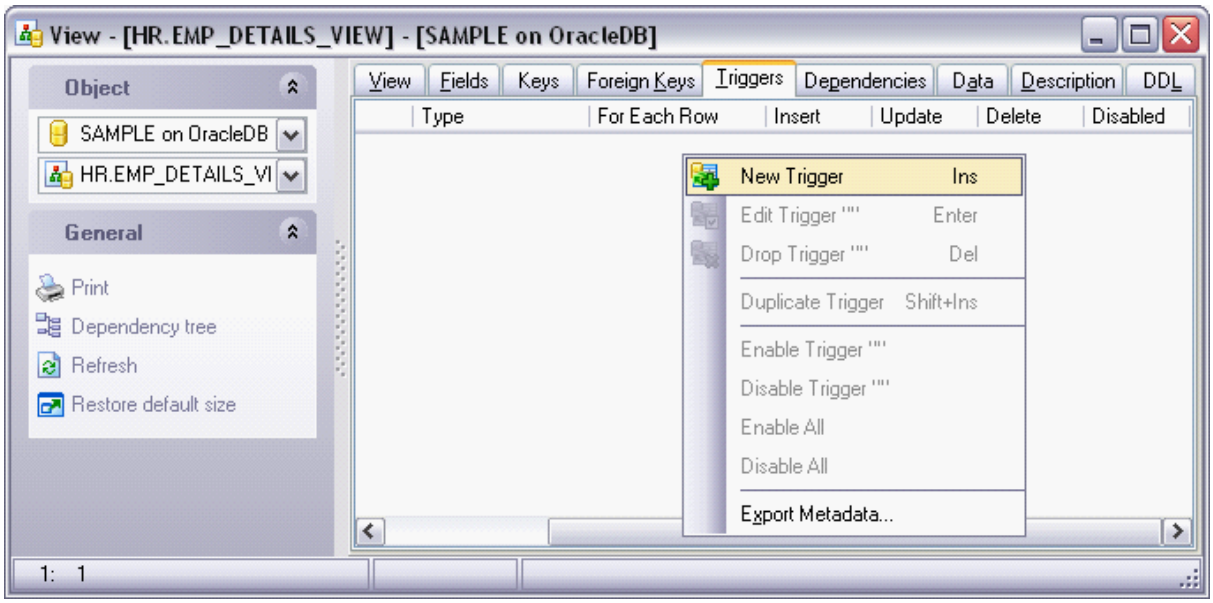
See Foreign Keys for details.



5.3.6.1.6 Managing triggers

The **Triggers** tab is provided for managing table triggers. Double-click a trigger to open the Trigger Editor for editing the trigger. A right-click displays the popup menu, allowing you to create new, edit, or drop the selected trigger.

See Triggers for details.



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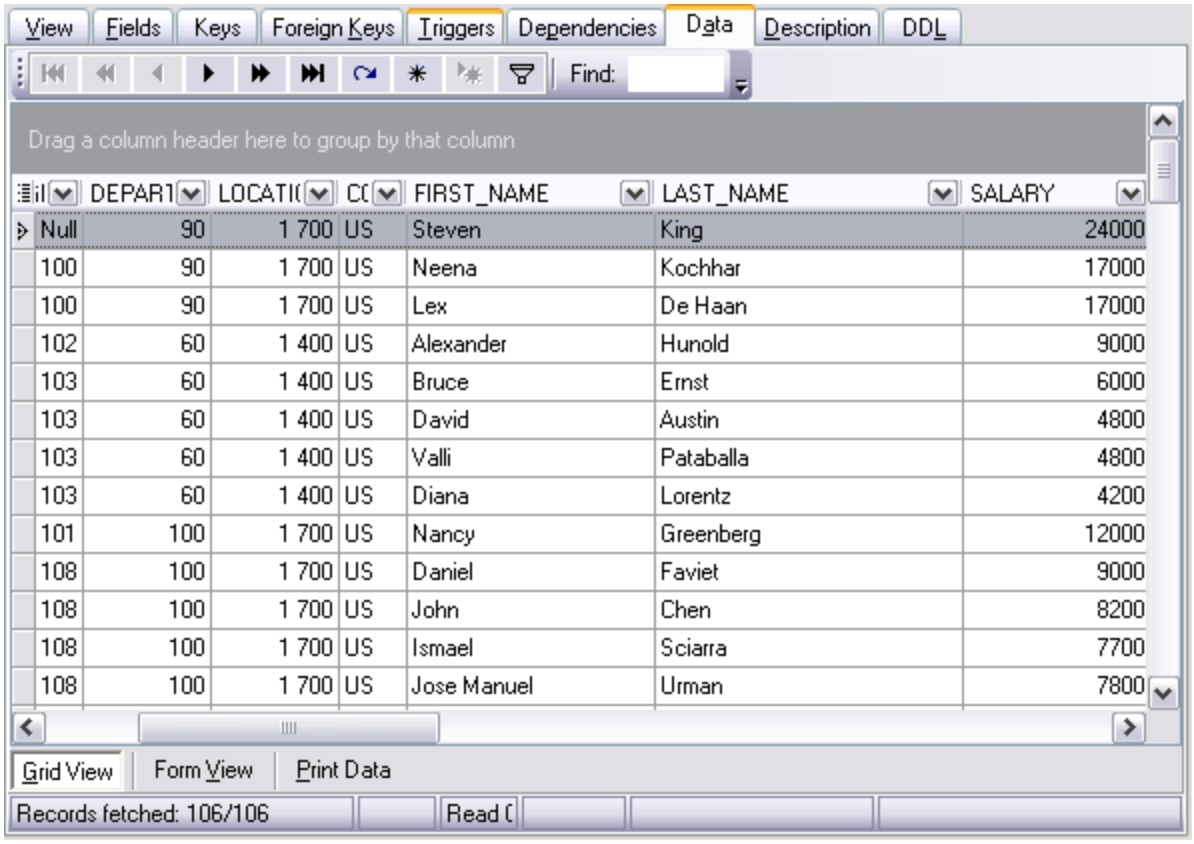
5.3.6.1.7 Viewing view data

The **Data** tab displays the view data as a grid (see Data View for details). The popup menu of this tab and the Data Management navigation bar allow you to Export Data, Import Data, Export as SQL Script.


View
Fields
Keys
Foreign Keys
Triggers
Dependencies
Data
Description
DDL
Find:
Drag a column header here to group by that column
DEPART
LOCATI
C
FIRST_NAME
LAST_NAME
SALARY
Null 90 1 700 US Steven King 24000
100 90 1 700 US Neena Kochhar 17000
100 90 1 700 US Lex De Haan 17000
102 60 1 400 US Alexander Hunold 9000
103 60 1 400 US Bruce Ernst 6000
103 60 1 400 US David Austin 4800
103 60 1 400 US Valli Pataballa 4800
103 60 1 400 US Diana Lorentz 4200
101 100 1 700 US Nancy Greenberg 12000
108 100 1 700 US Daniel Faviet 9000
108 100 1 700 US John Chen 8200
108 100 1 700 US Ismael Sciarra 7700
108 100 1 700 US Jose Manuel Urman 7800
Grid View
Form View
Print Data
Records fetched: 106/106
Read (

5.3.7 Procedures

A **procedure** is a group of PL/SQL statements that you can call by name. A call specification (sometimes called call spec) declares a Java method or a third-generation language (3GL) routine so that it can be called from SQL and PL/SQL. The call spec tells Oracle which Java method to invoke when a call is made. It also tells the database what type conversions to make for the arguments and return value.

Creating Procedure

To create a new procedure:

- Select the **Database | New Object...** menu item.
- Select **Procedure** in the New Object dialog.
- Edit procedure within the Procedure Editor.

> **Hint**: To create new procedure you can also right-click the **Procedures** node of the explorer tree and select **New Procedure...** item from the popup menu.

To create a new procedure with the same properties as one of the existing procedures

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has:

- Select the **Database | Duplicate Object...** menu item.
- Follow the instructions of the Duplicate Object Wizard.

Editing Procedure

To edit an existing procedure:

- Select the procedure for editing in the explorer tree (type the first letters of the procedure name for quick search)
- Right-click and select the **Edit Procedure** item from the popup menu or simply double-click the procedure.
- Edit procedure definition in the editor area of the Procedure Editor.

To change the name of a Procedure:

- Select the procedure to rename in the explorer tree.
- Right-click and select the **Rename Procedure** item from the popup menu.
- Edit procedure name in the dialog window.

Executing Procedure

To execute a procedure:

- Select the procedure in the explorer tree (type the first letters of the procedure name for quick search).
- Right-click and select **Edit Procedure** item from the popup menu or simply double-click the procedure.
- Execute procedure by clicking on the **Execute Procedure** item in the Procedure Editor.

Dropping Procedure

To drop a Procedure:

- Select the procedure to drop in the explorer tree.
- Right-click and select the **Drop Procedure** item from the popup menu.
- Confirm dropping in the dialog window.

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5.3.7.1 Procedure Editor

The **Procedure Editor** allows you to create new procedure, execute the existing procedure or edit its definition. It opens when you create a new procedure or edit the existing one (see Create Procedure and Edit Procedure for details).

- Using navigation bar
- Editing procedure definition
- Executing procedure
- Specifying input parameters
- Editing object description
- Viewing DDL definition
- Browsing object dependencies

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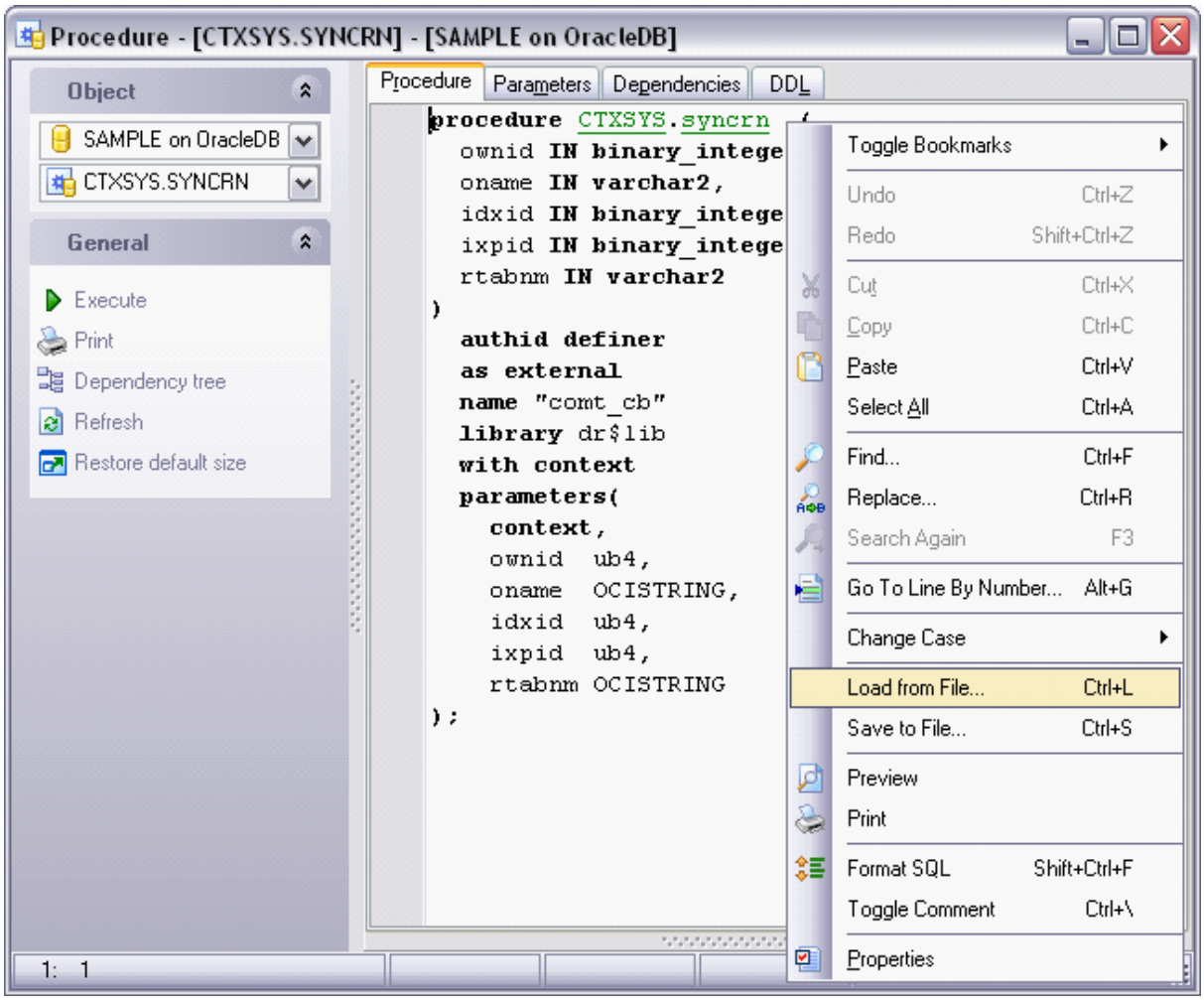

Availability:

Windows Full	Yes
Windows Lite	Yes

5.3.7.1.1 Using navigation bar

The navigation bar on the left allows you to:

Object bar:
Select a database and a procedure for editing within the current window.

General bar:
- Compile the current procedure
- Execute the current procedure
- Print metadata of the current procedure
- View Dependency Tree for the procedure
- Refresh the content of the active tab
- Bring the window to its default size.

The next bar displays various actions according to the current page of **Procedure Editor**.

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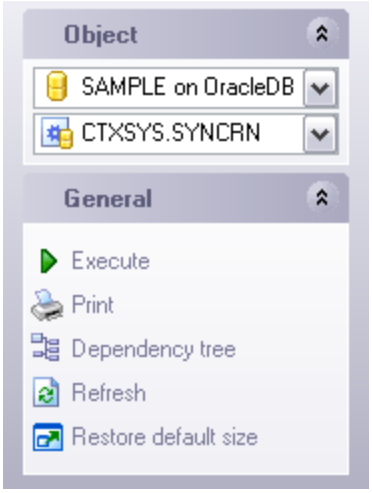

5.3.7.1.2 Editing procedure definition

The **Procedure** tab allows you to view and edit the definition for the stored procedure.

Note: to paste input parameters into procedure text use <Ctrl+Shift+P> shortcut .

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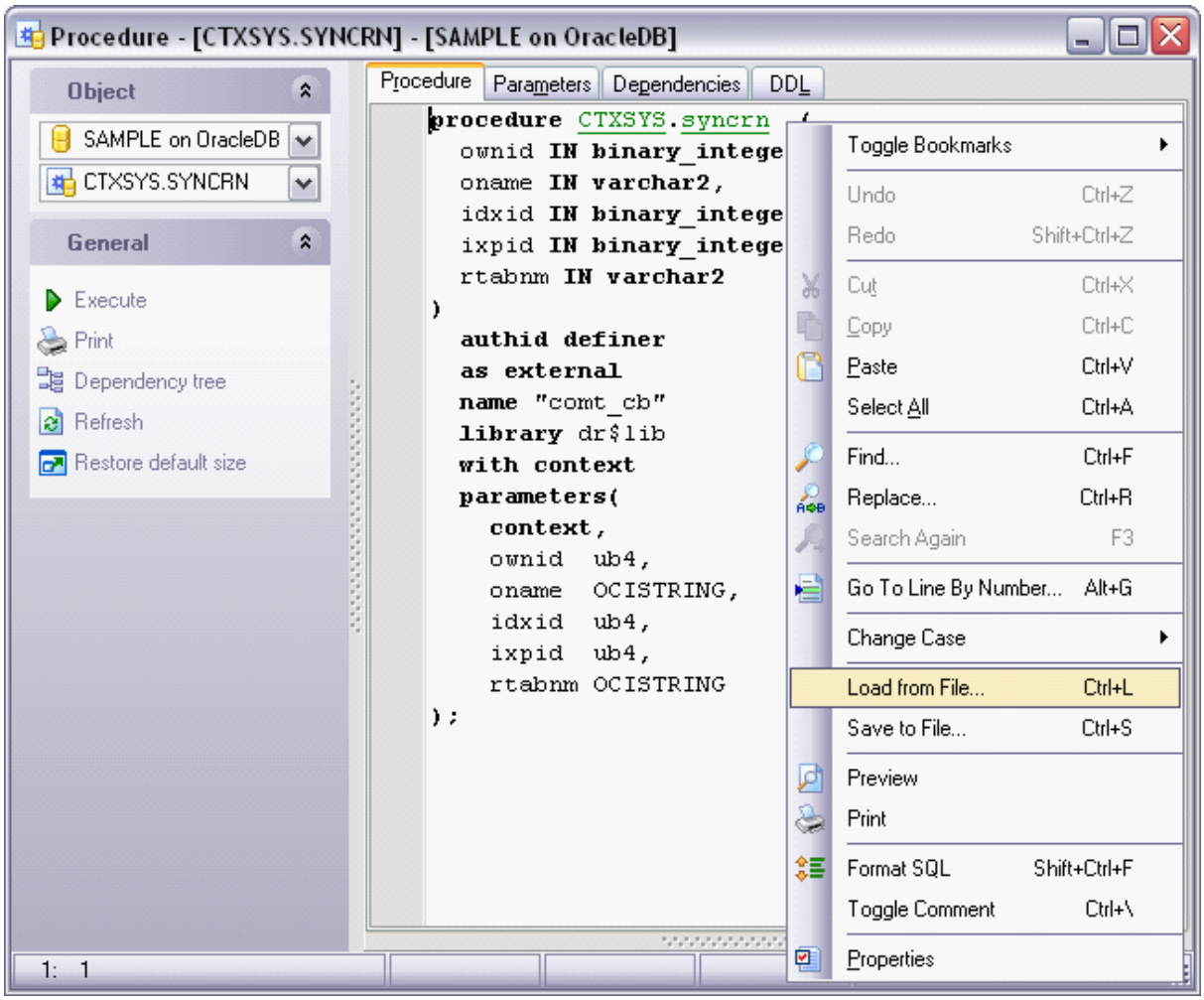

5.3.7.1.3 Executing procedure/function

Procedure Editor/Function Editor provides an ability to execute current procedure or function. Click the **Execute** item of the navigation bar to execute the procedure/function. If the procedure/function parameters, SQL Manager 2007 for Oracle allows you to specify the values for these parameters in the Input Parameters dialog, which appears just before execution. The result of the successfully executed procedure/function, as well as the error message in case of execution failure, appears in the message panel at the bottom of the **Procedure Editor/Function** Editor.

5.3.7.1.4 Specifying input parameters

If the stored procedure/function has parameters, the **Input Parameter dialog** appears before executing it. It allows you to specify the values for all parameters. After changes are done, click the **OK** button to execute the stored procedure/function, or the **Cancel** button to abort the execution.

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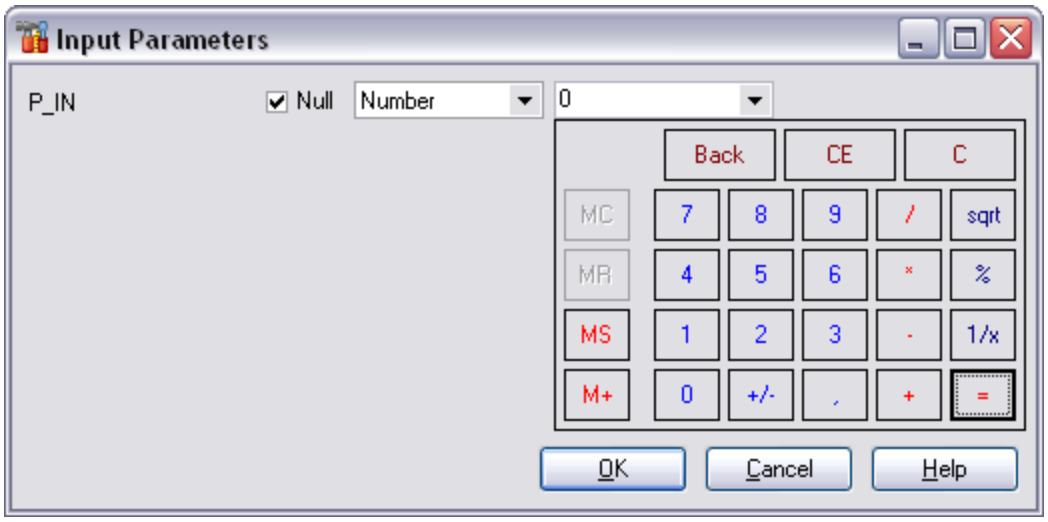

5.3.8 Functions

A **stored function** (also called a **user function** or **user-defined function**) is a set of PL/SQL statements you can call by name. Stored functions are very similar to procedures, except that a function returns a value to the environment in which it is called. User functions can be used as part of a SQL expression.

Create Function

To create a new user-defined function:

- Select the **Database | New Object...** menu item.
- Select **Function** in the New Object dialog.
- Edit user-defined function definition within the Function Editor.

> **Hint**: To create new user-defined function you can also right-click the **Functions** node of the explorer tree and select the **New Function...** item from the popup menu.

To create a new user-defined function with the same properties as one of the existing user-defined functions has:

- Select the **Database | Duplicate Object...** menu item.
- Follow the instructions of the Duplicate Object Wizard.

Edit Function

To edit the existing user-defined function:

- Select the user-defined function for editing in the explorer tree (type the first letters of the user-defined function name for quick search).
- Right-click and select the **Edit Function <Function_Name>** item from the popup menu or simply double-click the user-defined function.
- Edit user-defined function definition and description on the appropriate tabs of the Function Editor.

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Drop Function

To drop a user-defined function:

- Select the user-defined function to drop in the explorer tree.
- Right-click and select the **Drop Function <Function_Name>** item from the popup menu.
- Confirm dropping in the dialog window.

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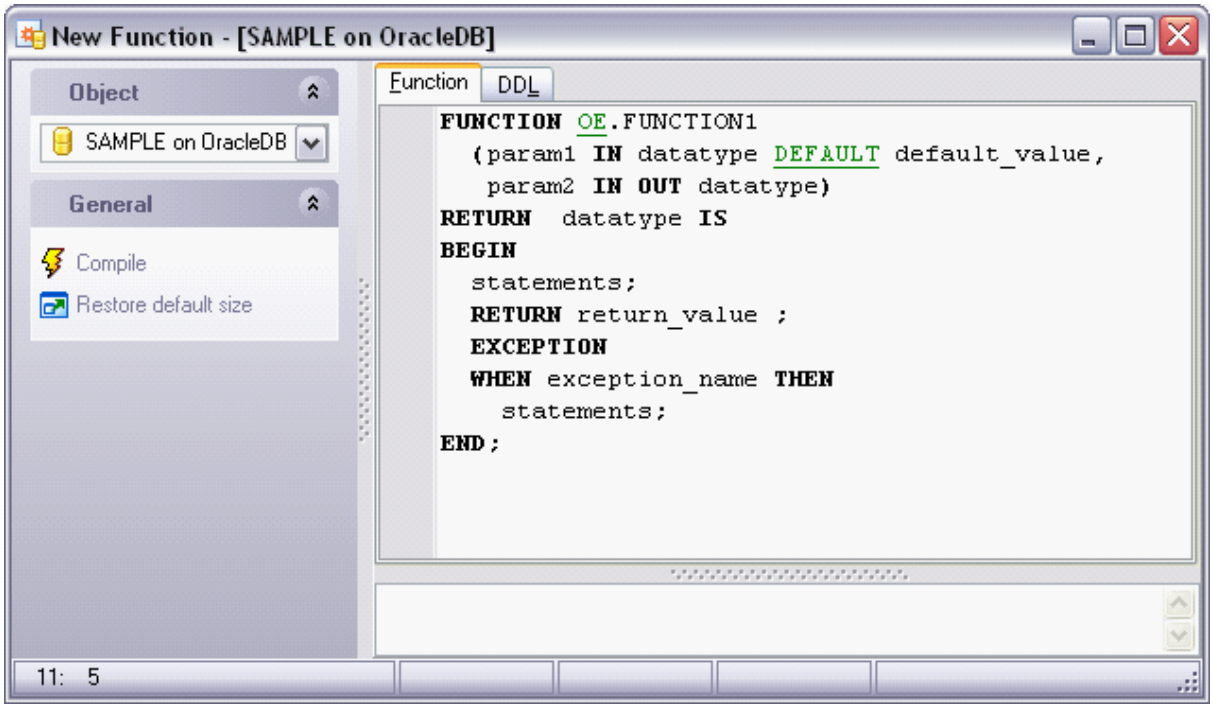
5.3.8.1 Function Editor

The **UDF Editor** allows you to define user-defined function properties. It opens when you create a new user-defined function or edit the existing one (see Create UDF and Edit UDF for details).

To open a view in the **UDF Editor**, double-click it in the Explorer Tree.

- Using navigation bar
- Editing user-defined function definition
- Browsing user-defined function parameters
- Editing object description
- Viewing DDL definition
- Browsing object dependencies



5.3.8.1.1 Using navigation bar

The navigation bar on the left allows you to:

Object bar:
- Select a database and a user-defined function for editing within the current window.

General bar:
- Compile the current user-defined function definition
- Print metadata of the current user-defined function
- View Dependency Tree for the user-defined function
- Refresh the content of the active tab
- Bring the window to its default size

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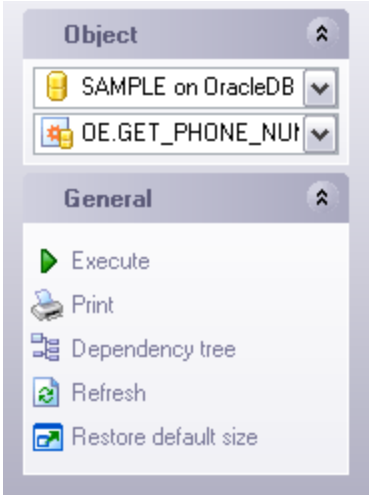
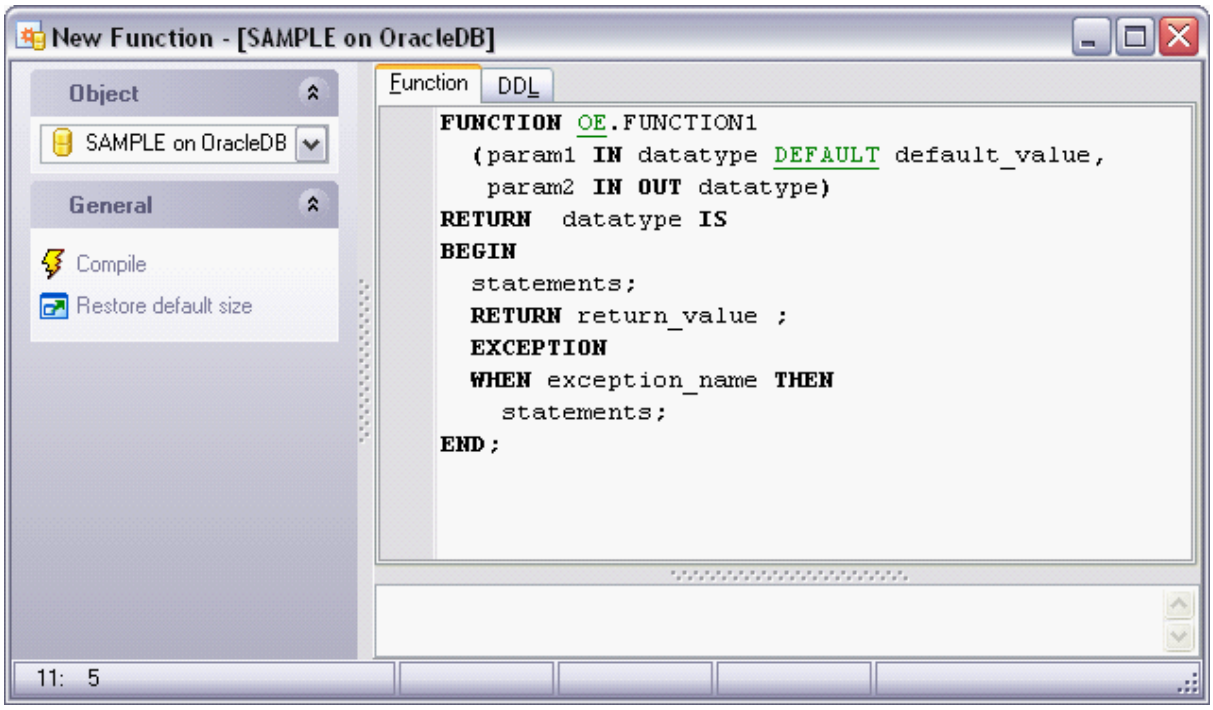
The next bar displays various actions according to the current page of **Function Editor**.



5.3.8.1.2 Editing Function definition

The **Function** tab allows you to view and edit the definition for the user-defined function.

On executing a function please see Executing procedure/function.



5.3.8.1.3 Browsing Function parameters

The **Parameters** tab is provided for browsing list of parameters for the user-defined function. A right-click displays the popup menu, allowing you to export this list to desired format.

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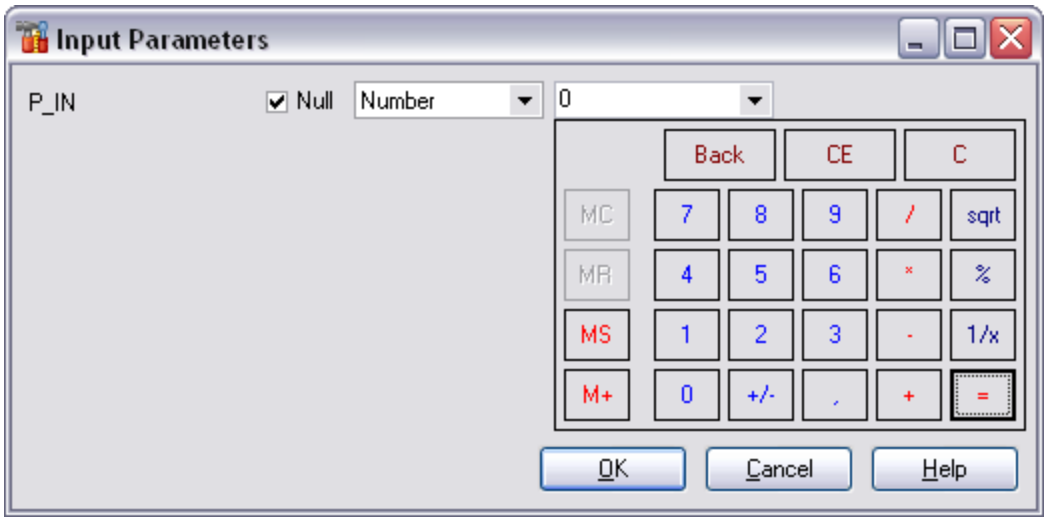

5.3.9 Triggers

A trigger is an anonymous PL/SQL block or a call to a procedure implemented in PL/SQL or Java

Oracle automatically executes a trigger when specified conditions occur.

Create Trigger

To create a new Trigger:

- Select the **Database | New Object...** menu item.
- Select **Trigger** in the New Object dialog.
- Edit Trigger definition within the Trigger Editor.

> **Hint**: To create new Trigger you can also right-click the **Triggers** node of the explorer tree and select the **New Trigger...** item from the popup menu.

To create a new Trigger with the same properties as one of the existing Triggers has:

- Select the **Database | Duplicate Object...** menu item.
- Follow the instructions of the Duplicate Object Wizard.

Edit Trigger

To edit the existing Trigger:

- Select the Trigger for editing in the explorer tree (type the first letters of the Trigger name for quick search).
- Right-click and select the **Edit Trigger <Trigger_Name>** item from the popup menu or simply double-click the _Trigger.
- Edit Trigger definition and data on the appropriate tabs of the Trigger Editor.

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Drop Trigger

To drop a Trigger:

- Select the user to drop in the explorer tree.
- Right-click and select the **Drop Trigger <Trigger_Name>** item from the popup menu.
- Confirm dropping in the dialog window.

5.3.9.1 Trigger Editor

The **Trigger Editor** allows you to define trigger properties. It opens when you create a new trigger or edit the existing one (see Create trigger and Edit trigger for details).

- Using navigation bar
- Editing trigger definition
- Editing object description
- Viewing DDL definition
- Browsing object dependencies

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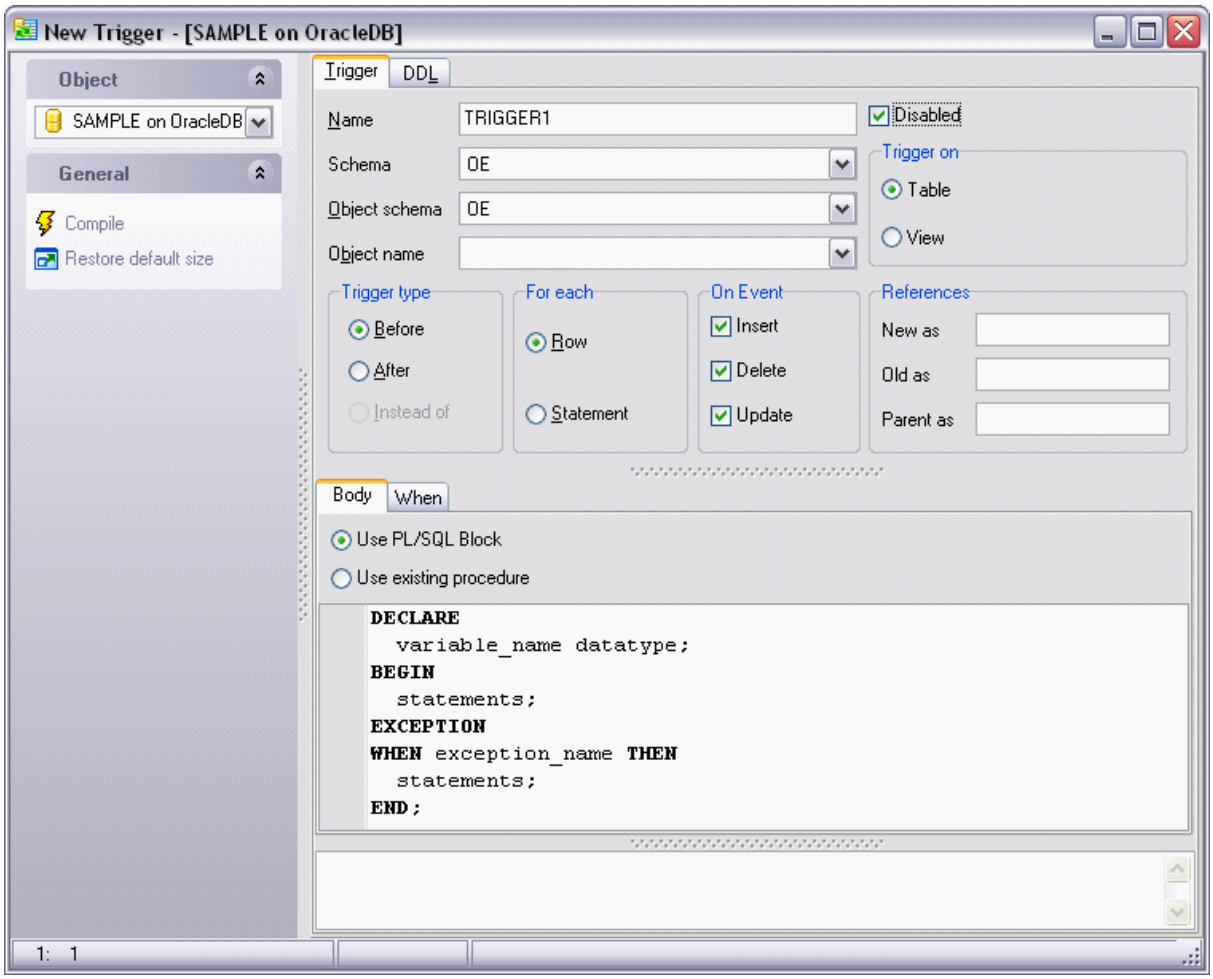

Availability:	
Windows Full	Yes
Windows Lite	Yes

5.3.9.1.1 Using navigation bar

The navigation bar on the left allows you to:

Object bar:
- Select a database and a trigger for editing within the current window.

General bar:
- Compile the current trigger definition
- Print metadata of the current trigger
- View Dependency Tree for the trigger
- Refresh the content of the active tab
- Bring the window to its default size

The next bar displays various actions according to the current page of the **Trigger Editor**.

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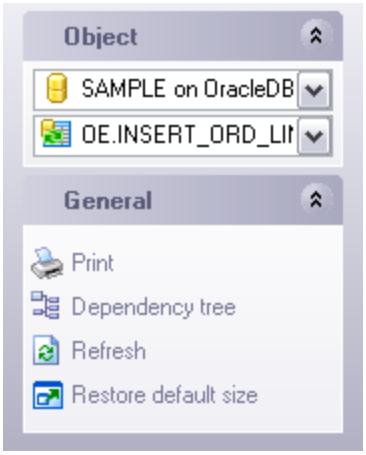

5.3.9.1.2 Editing trigger definition

The main trigger parameters are set on the **Trigger** tab.

Name
Name of the trigger; it must be unique to the database.

Trigger on
Table or view name, the trigger is created for.

Trigger type
Specify whether the trigger should fire after/before/instead of executing the triggering event ('instead of' mode is only available for views). For row triggers, the trigger is fired before each affected row is changed.

For each
Specify Row value for this option to designate the trigger as a row trigger. Oracle fires a row trigger once for each row that is affected by the triggering statement and meets the optional trigger constraint defined in the WHEN condition.

On Event
Conditions of the trigger firing, i.e. table/view operation for firing (Insert, Update or Delete).

References
Here the correlation names should be specified. You can use correlation names in the PL/SQL block and WHEN condition of a row trigger to refer specifically to old and new values of the current row. The default correlation names are OLD and NEW. If your row trigger is associated with a table named OLD or NEW, use this option to specify different correlation names to avoid confusion between the table name and the correlation name. If the trigger is defined on a nested table, then OLD and NEW refer to the row of the nested table, and PARENT refers to the current row of the parent table.

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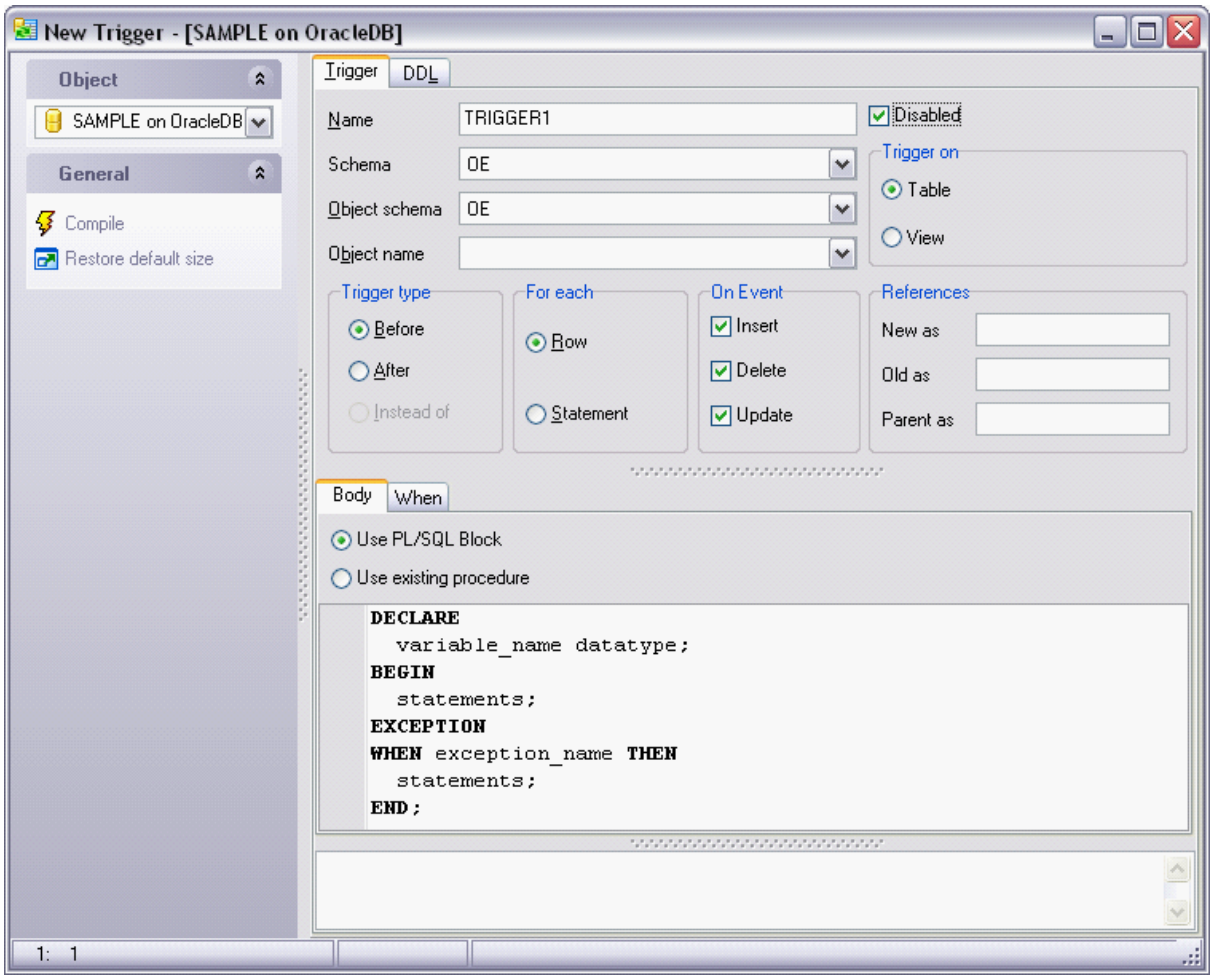

5.3.10 DB and Schema Triggers

A database trigger is:
- A stored PL/SQL block associated a schema, or the database or
- An anonymous PL/SQL block or a call to a procedure implemented in PL/SQL or Java

Oracle automatically executes a trigger when specified conditions occur.

Create DB/Schema Trigger

To create a new DB/Schema Trigger:

- Select the **Database | New Object...** menu item.
- Select **DB/Schema Trigger** in the New Object dialog.
- Edit DB/Schema Trigger definition within the DB/Schema Trigger Editor.

> **Hint**: To create new DB/Schema Trigger you can also right-click the **DB/Schema Triggers** node of the explorer tree and select the **New DB/Schema Trigger...** item from the popup menu.

To create a new DB/Schema Trigger with the same properties as one of the existing DB/Schema Triggers has:

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- Select the **Database | Duplicate Object...** menu item.
- Follow the instructions of the Duplicate Object Wizard.

Edit DB/Schema Trigger

To edit the existing DB/Schema Trigger:

- Select the DB/Schema Trigger for editing in the explorer tree (type the first letters of the DB/Schema Trigger name for quick search).
- Right-click and select the **Edit DB/Schema Trigger <DB/Schema Trigger_Name>** item from the popup menu or simply double-click the DB/Schema Trigger.
- Edit DB/Schema Trigger definition and data on the appropriate tabs of the DB/Schema Trigger Editor.

Drop DB/Schema Trigger

To drop a DB/Schema Trigger:

- Select the DB/Schema Trigger to drop in the explorer tree.
- Right-click and select the **Drop DB/Schema Trigger <DB/Schema Trigger_Name>** item from the popup menu.
- Confirm dropping in the dialog window.

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5.3.10.1 DB and Schema Trigger Editor

The **DB/Schema Trigger Editor** allows you to define DB/Schema Trigger properties. It opens when you create a new sequence or edit the existing one (see Create DB/Schema Trigger and Edit DB/Schema Trigger for details).

To open a view in the **DB/Schema Trigger Editor**, double-click it in the explorer tree.

- Using navigation bar
- Editing DB/Schema Trigger definition
- Editing object description
- Viewing DDL definition
- Browsing object dependencies

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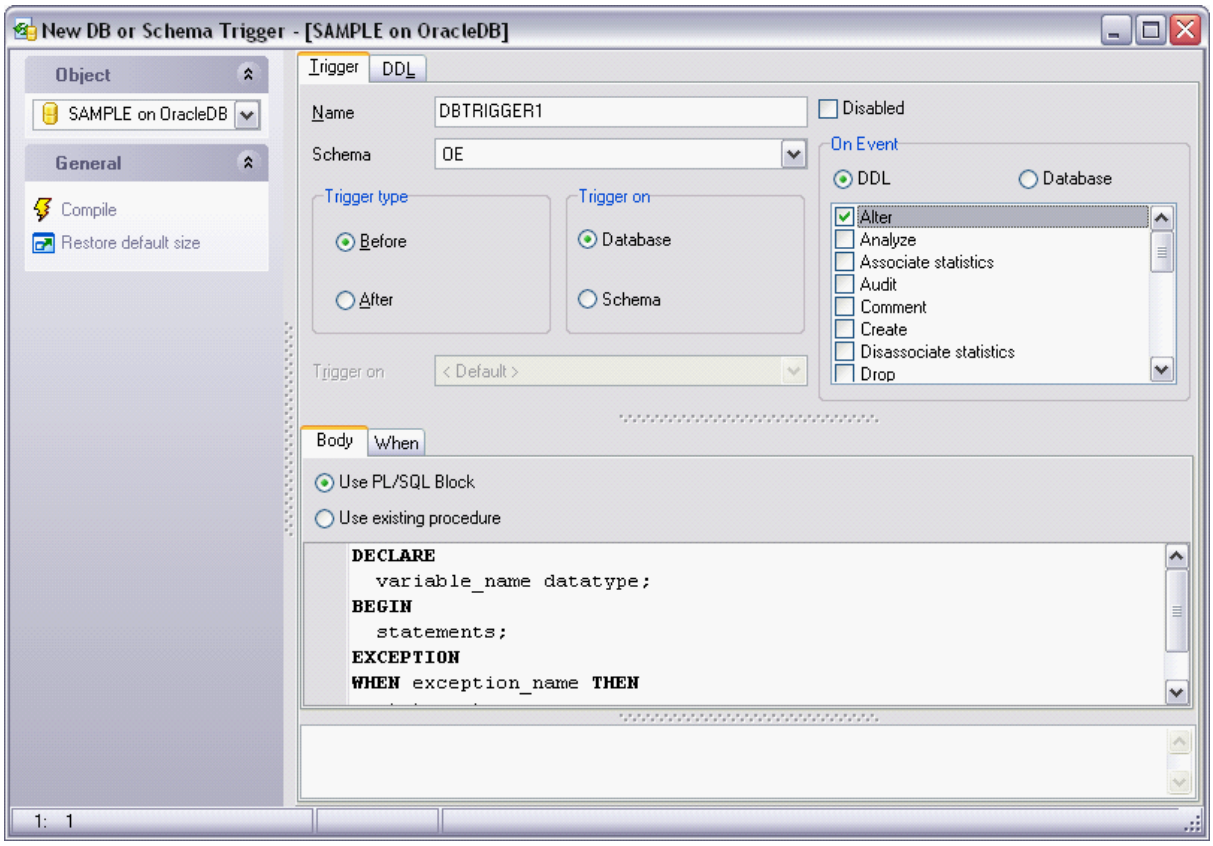

Availability:

Windows Full	Yes
Windows Lite	Yes

5.3.10.1.1 Using navigation bar

The navigation bar on the left allows you to:

Object bar:
- Select a database and a DB/Schema trigger for editing within the current window.

General bar:
- Compile the current DB/Schema trigger definition
- Print metadata of the current DB/Schema trigger
- View Dependency Tree for the DB/Schema trigger
- Refresh the content of the active tab
- Bring the window to its default size

5.3.10.1.2 Editing DB/Schema Trigger definition

The main trigger parameters are set on the **Trigger** tab.

Name
Name of the trigger; it must be unique to the database.

Trigger type

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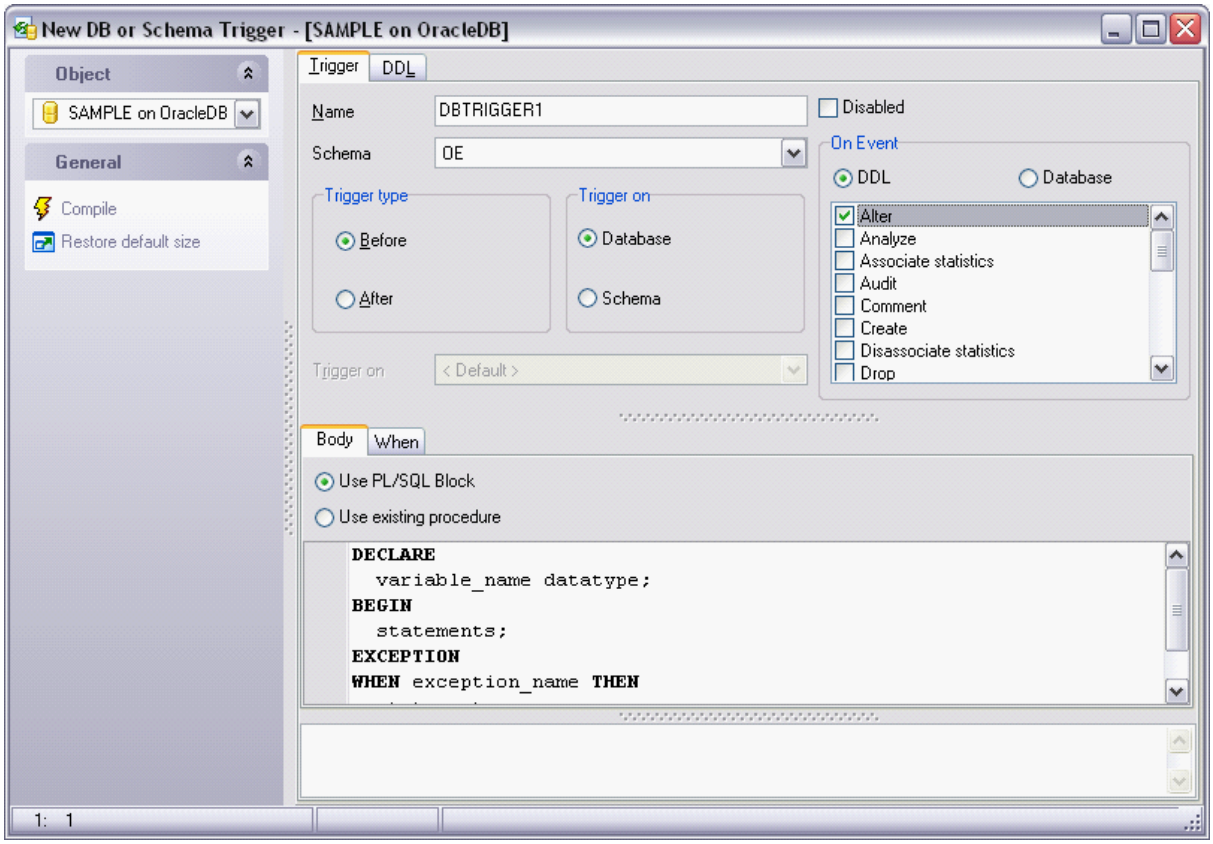
Specify whether the trigger should fire after/before/instead of executing the triggering event. For row triggers, the trigger is fired before each affected row is changed.

Trigger on
Database or schema name, the trigger is created for.

On Event
Specify one or more particular states of the database that can cause the trigger to fire. You can create triggers for these events on database or schema. For each of these triggering events, Oracle opens an autonomous transaction scope, fires the trigger, and commits any separate transaction (regardless of any existing user transaction).

The trigger body consists of an optional list of local variables and their data types and a block of statements in Oracle procedure and trigger language, bracketed by BEGIN and END. These statements are performed when the trigger fires.



5.3.11 Indices

An **index** is a schema object that contains an entry for each value that appears in the indexed column(s) of the table or cluster and provides direct, fast access to rows.

Create index

To create a new index:

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- Select the **Database | New Object...** menu item.
- Select **index** in the New Object dialog.
- Edit index definition within the Index Editor.

Hint: To create new index you can also right-click the **Indices** node of the explorer tree and select the **New index...** item from the popup menu.

To create a new index with the same properties as one of the existing indices has:

- Select the **Database | Duplicate Object...** menu item.
- Follow the instructions of the Duplicate Object Wizard.

Edit index

To edit the existing index:

- Select the index for editing in the explorer tree (type the first letters of the index name for quick search).
- Right-click and select the **Edit index <Index_Name>** item from the popup menu or simply double-click the index.
- Edit index definition and data on the appropriate tabs of the Index Editor.

Drop index

To drop a index:

- Select the index to drop in the explorer tree.
- Right-click and select the **Drop index <Index_Name>** item from the popup menu.
- Confirm dropping in the dialog window.

5.3.11.1 Index Editor

The **Index Editor Dialog** allows you to edit index properties.

Also you can access the Index Editor Dialog from the New Object dialog. In this case you will be able to create indexes for different tables at once.

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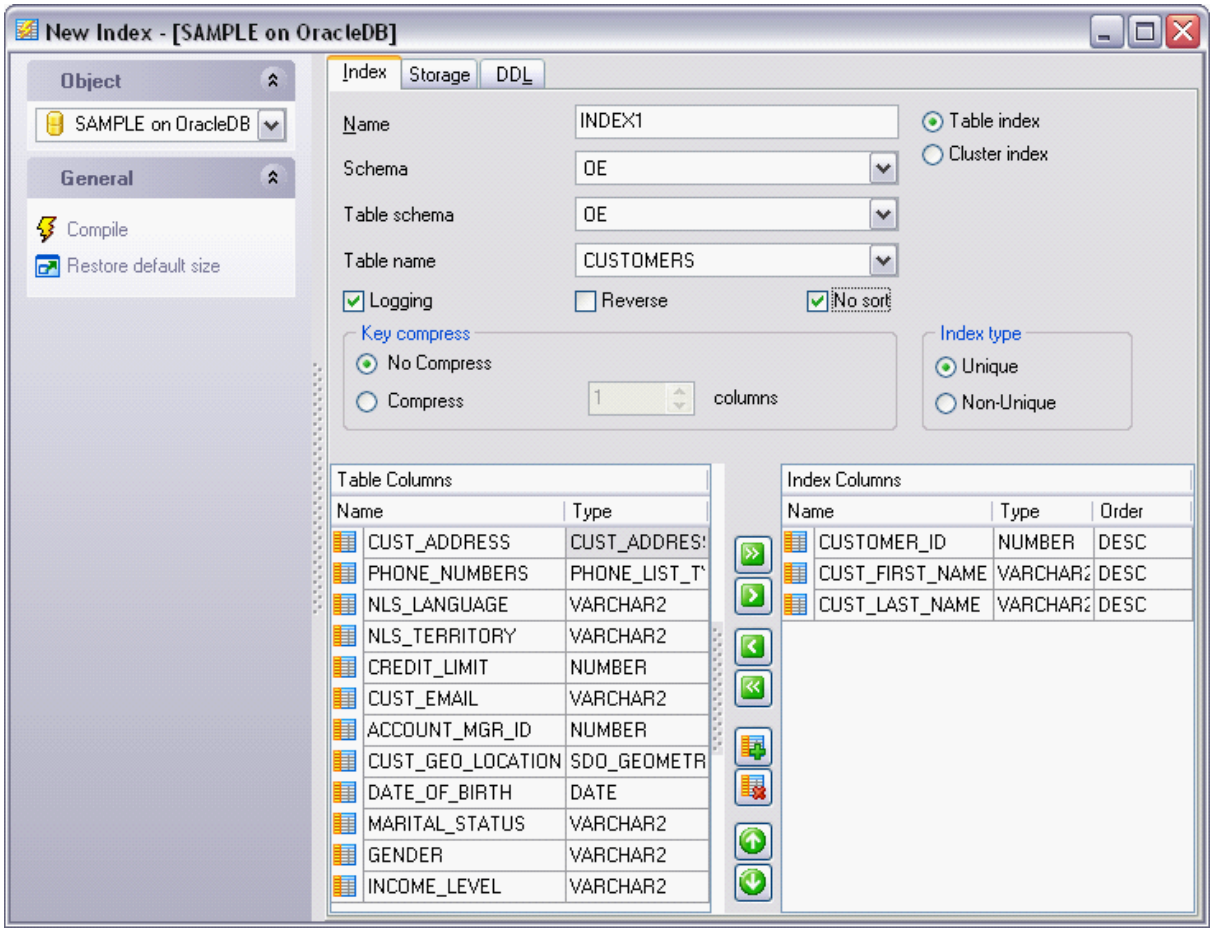
- Using navigation bar
- Creating new index
- Object storage attributes
- Editing object description
- Viewing DDL definition
- Browsing object dependencies

See also:
Table Editor



Availability:

Windows Full	Yes
Windows Lite	Yes

5.3.11.1.1 Using navigation bar

The navigation bar on the left allows you to:

Object bar:
- Select a database and an index for editing within the current window.

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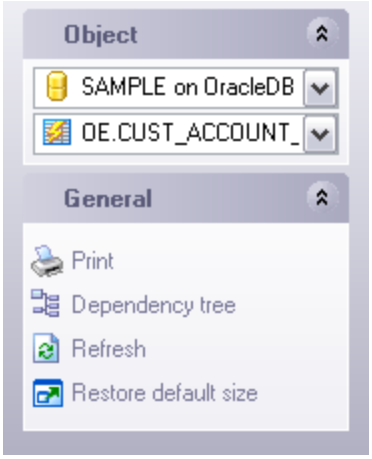
General bar:
- Compile the current index
- Print metadata of the current index
- View Dependency Tree for the index
- Refresh the content of the active tab
- Bring the window to its default size

The next bar displays various actions according to the current page of **Index Editor**.



5.3.11.1.2 Creating new index

Name
Set the name of the new index.

Schema
Is the name of the schema to which the object belongs.

Table schema / Table name
Specify the schema and table on which you are defining the index.

Table index/Cluster index
Specify whether a table or cluster index should be created.

Logging
Specify whether the creation of the index will be logged or not logged in the redo log file.

Reverse
Enable this option to store the bytes of the index block in reverse order, excluding the rowid. You cannot specify No sort with this option enabled.

No sort
specify NOSORT to indicate to the database that the rows are already stored in the database in ascending order, so that Oracle does not have to sort the rows when creating the index.

Key compress
Her you can enable key compression, which eliminates repeated occurrence of key column values and may substantially reduce storage. Use the **Columns** field to to specify the

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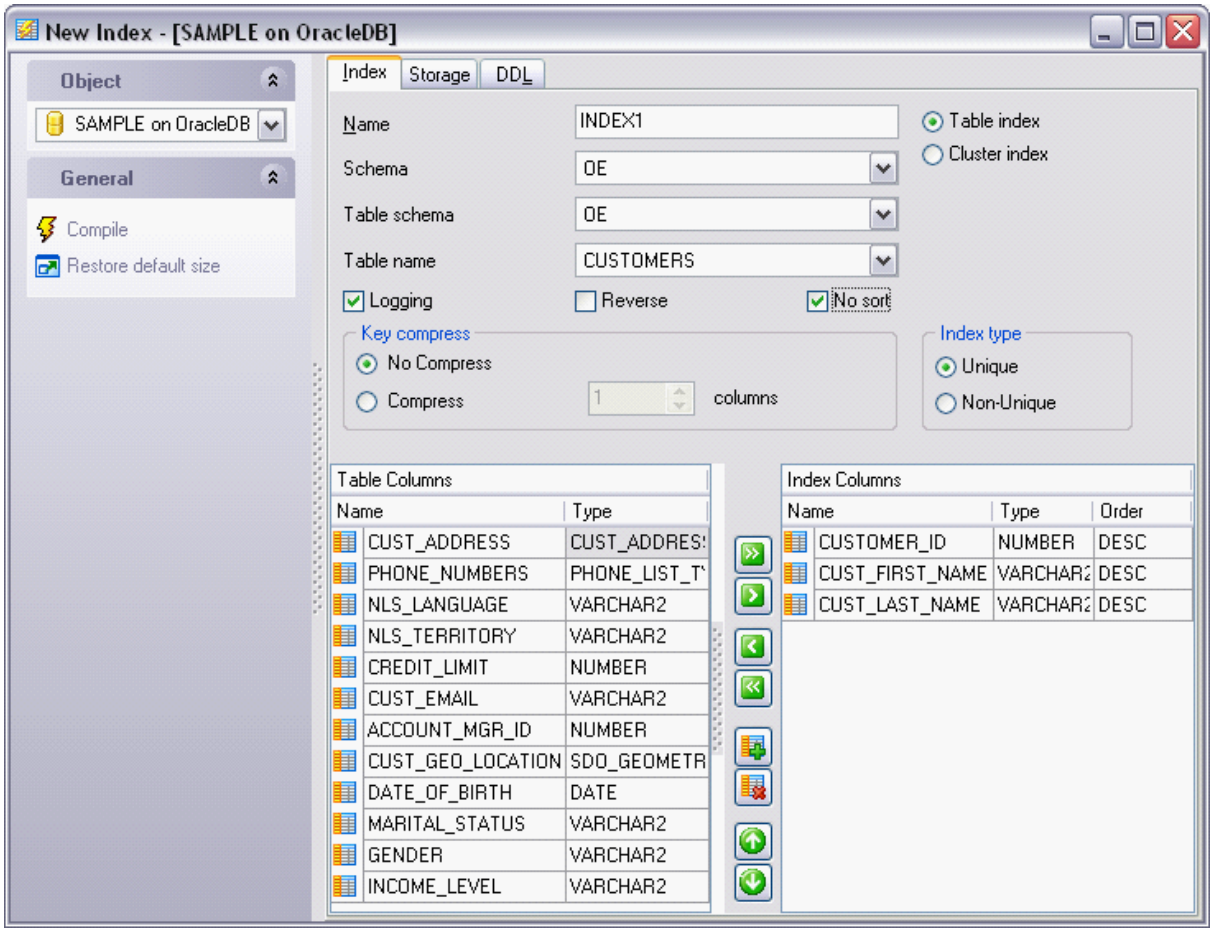
prefix length (number of prefix columns to compress).

Index type
Select **Unique** to indicate that the value of the column (or columns) upon which the index is based must be unique.

To include columns to the list, move them from the **Table columns** list to the **Index columns** by double-clicking or dragging their names. To remove the columns from the list, move them back in the same way. You can also use the arrow buttons to move the selected types (multiple selection can be performed using Ctrl or Shift).

Use the "Arrow up" and "Arrow down" buttons to move the fields in the list up an down

Use the "Plus sign" and "Cross" buttons to add/delete the expression built from columns of table, constants, SQL functions, and user-defined functions.



Primary
Makes index a primary key.

Fulltext
Makes index fulltext.

Unique

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Makes index unique.

5.3.12 Packages

The **package** is an encapsulated collection of related procedures, functions, and other program objects stored together in the database. The package specification declares these objects. The package body, specified subsequently, defines these objects.

Create package

To create a new package:

- Select the **Database | New Object...** menu item.
- Select **package** in the New Object dialog.
- Edit package definition within the Package Editor.

> **Hint**: To create new package you can also right-click the **Packages** node of the explorer tree and select the **New package...** item from the popup menu.

To create a new package with the same properties as one of the existing packages has:

- Select the **Database | Duplicate Object...** menu item.
- Follow the instructions of the Duplicate Object Wizard.

Edit package

To edit the existing package:

- Select the package for editing in the explorer tree (type the first letters of the package name for quick search).
- Right-click and select the **Edit package <Package_Name>** item from the popup menu or simply double-click the package.
- Edit package definition and data on the appropriate tabs of the Package Editor.

Drop package

To drop a package:

- Select the package to drop in the explorer tree.
- Right-click and select the **Drop package <Package_Name>** item from the popup menu.
- Confirm dropping in the dialog window.

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5.3.12.1 Package Editor

The **Package Editor** allows you to define package properties. It opens when you create a new package or edit the existing one (see Create Package and Edit Package for details).

To open a view in the **Package Editor**, double-click it in the explorer tree.

- Using navigation bar
- Editing package definition
- Editing object description
- Viewing DDL definition
- Browsing object dependencies

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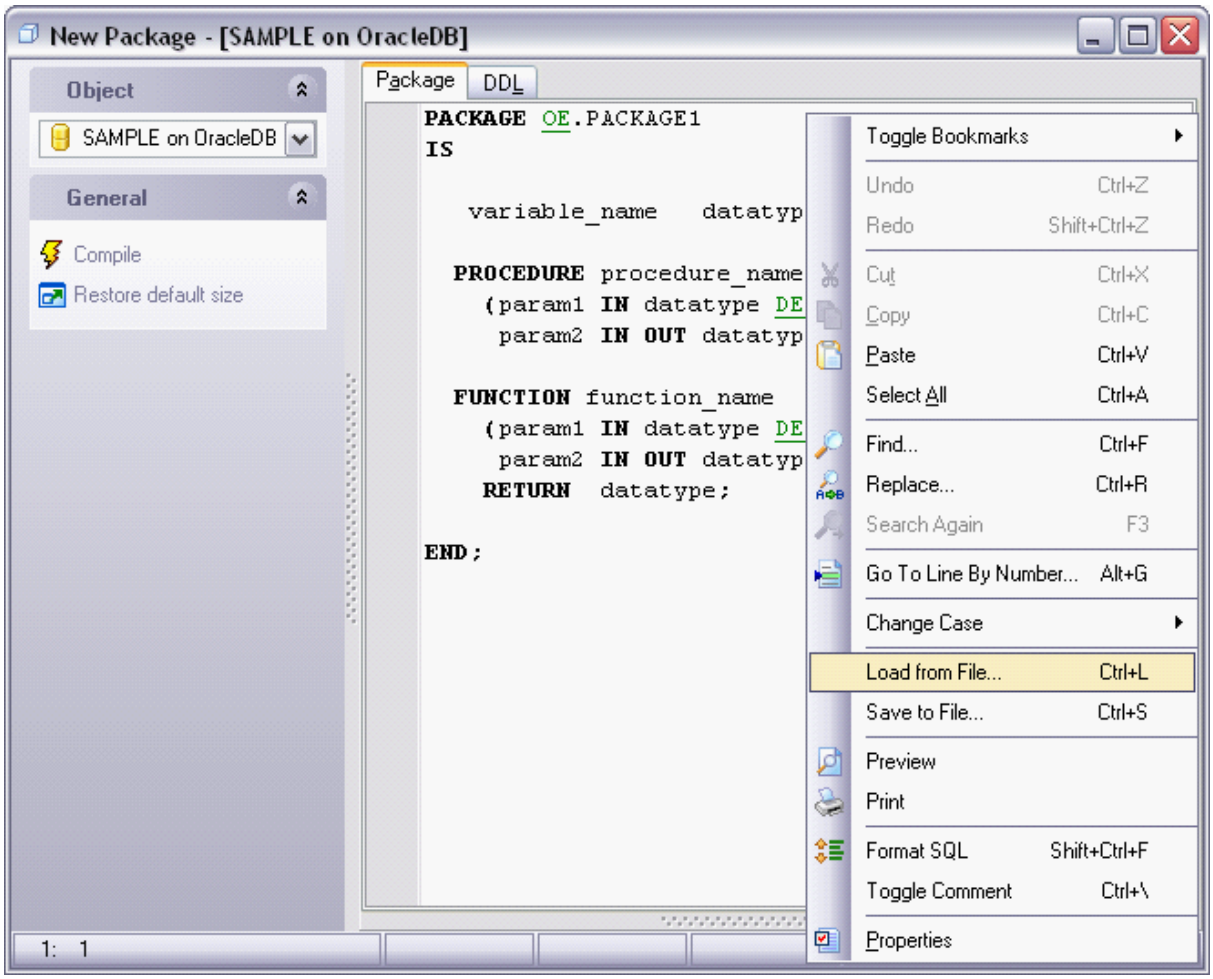

Availability:	
Windows Full	Yes
Windows Lite	Yes

5.3.12.1.1 Using navigation bar

The navigation bar on the left allows you to:

Object bar:
- Select a database and a package for editing within the current window.

General bar:
- Compile the current package
- Print metadata of the current package
- View Dependency Tree for the package
- Refresh the content of the active tab
- Bring the window to its default size

5.3.12.1.2 Editing package definition

Specify the package specification, which can contain type definitions, cursor declarations, variable declarations, constant declarations, exception declarations, PL/SQL subprogram

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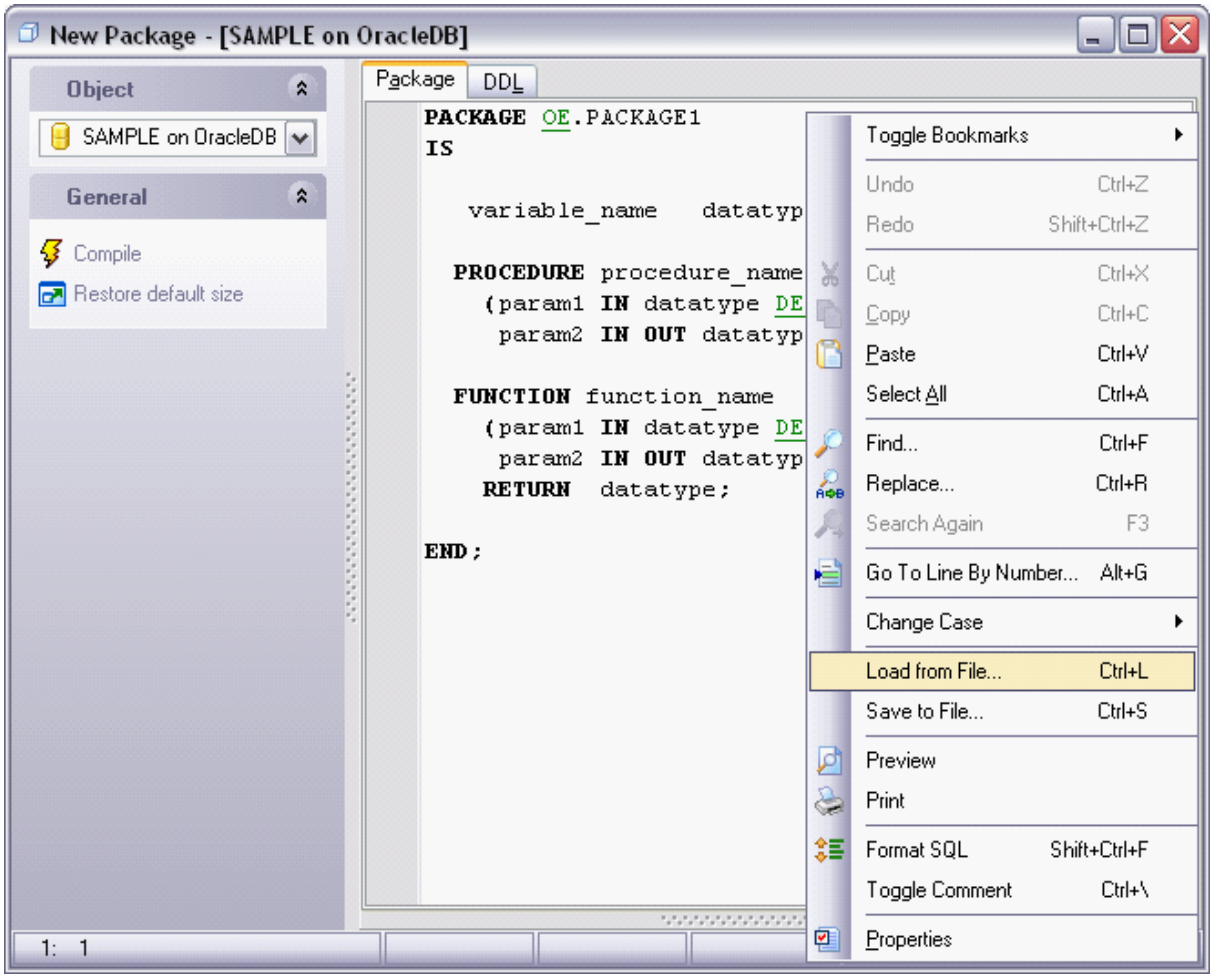
specifications, and call specifications, which are declarations of a C or Java routine expressed in PL/SQL.



5.3.13 Package Bodies

Package body is an encapsulated collection of related procedures, stored functions, and other program objects stored together in the database. The package body defines these objects. The package specification, defined in an earlier in Packages, declares these objects. Packages are an alternative to creating procedures and functions as standalone schema objects.

Create Package Body

To create a new Package Body:

- Select the **Database | New Object...** menu item.
- Select **Package Body** in the New Object dialog.
- Edit Package Body definition within the Package Body Editor.

> **Hint**: To create new Package Body you can also right-click the **Package Bodies** node of the explorer tree and select the **New Package Body...** item from the popup menu.

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To create a new Package Body with the same properties as one of the existing Package bodies has:

- Select the **Database | Duplicate Object...** menu item.
- Follow the instructions of the Duplicate Object Wizard.

Edit Package Body

To edit the existing Package Body:

- Select the Package Body for editing in the explorer tree (type the first letters of the Package Body name for quick search).
- Right-click and select the **Edit Package Body <Package Body_Name>** item from the popup menu or simply double-click the Package Body.
- Edit Package Body definition and data on the appropriate tabs of the Package Body Editor .

Drop Package Body

To drop an Package Body:

- Select the Package Body to drop in the explorer tree.
- Right-click and select the **Drop Package Body <Package Body_Name>** item from the popup menu.
- Confirm dropping in the dialog window.

5.3.13.1 Package Body Editor

The **Package Body Editor** allows you to define default properties. It opens when you create a new default or edit the existing one (see Create Package Body and Package Body Editor for details).

To open a view in the **Package Body Editor**, double-click it in the explorer tree.

- Using navigation bar
- Editing Package Body
- Editing object description
- Viewing DDL definition
- Browsing object dependencies

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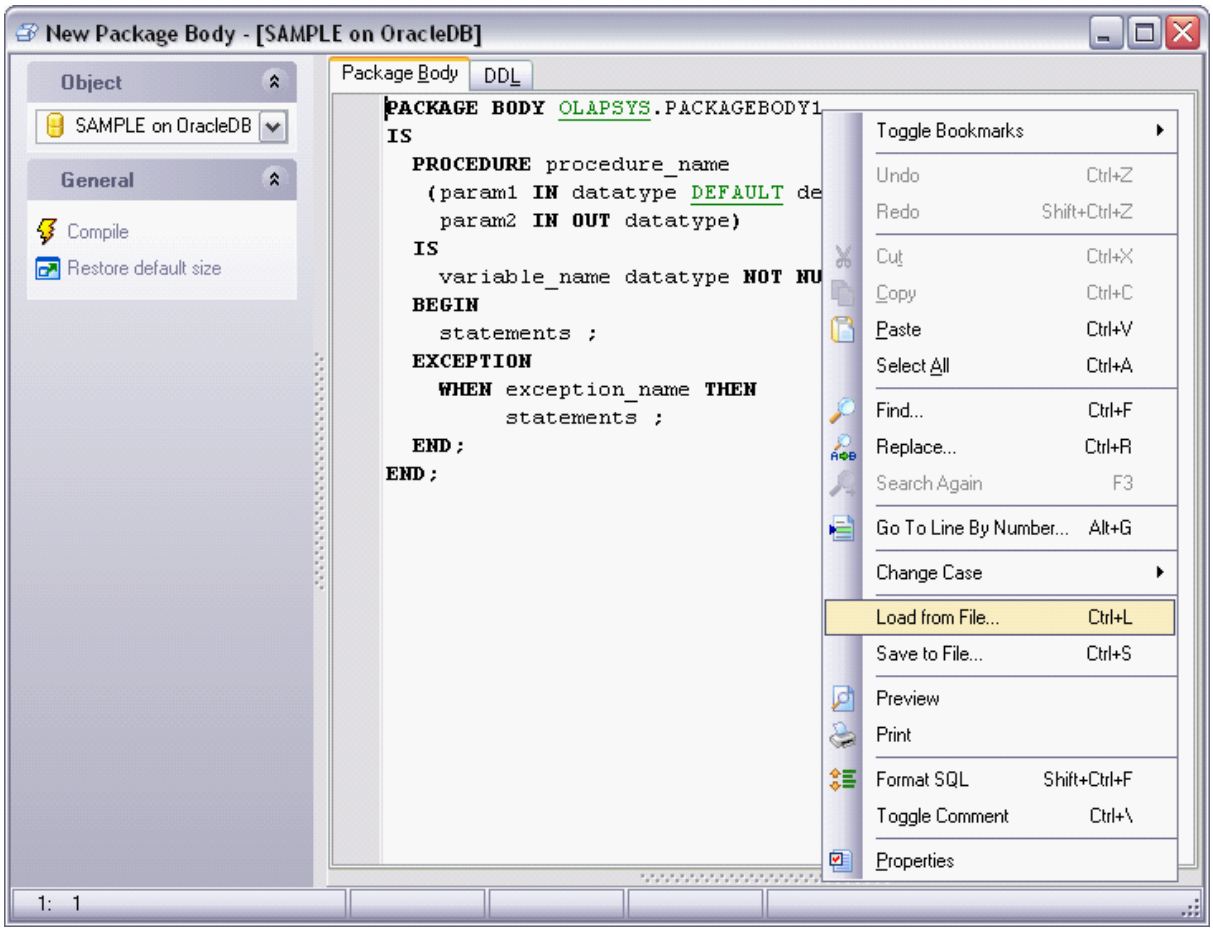

Availability:	
Windows Full	Yes
Windows Lite	Yes

5.3.13.1.1 Using navigation bar

The navigation bar on the left allows you to:

Object bar:
- Select a database and a package body for editing within the current window.

General bar:
- Compile the current package body
- Print metadata of the current package body
- View Dependency Tree for the package body
- Refresh the content of the active tab
- Bring the window to its default size

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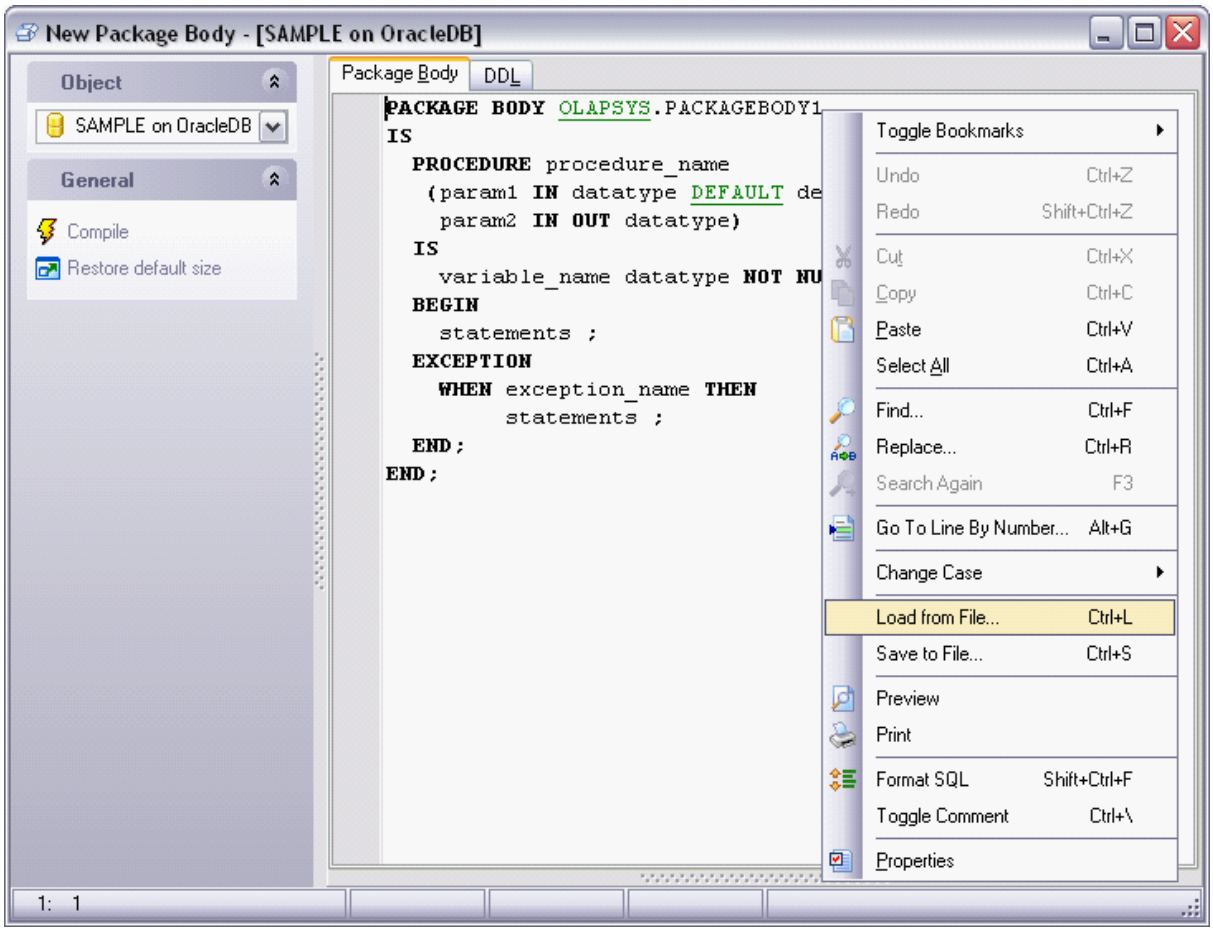
5.3.13.1.2 Editing Package Body

Specify the package body, which can contain PL/SQL subprogram bodies or call specifications, which are declarations of a C or Java routine expressed in PL/SQL.



5.3.14 Sequences

Sequence is a database object from which multiple users may generate unique integers. You can use sequences to automatically generate primary key values. When a sequence number is generated, the sequence is incremented, independent of the transaction committing or rolling back. If two users concurrently increment the same sequence, then the sequence numbers each user acquires may have gaps, because sequence numbers are being generated by the other user. One user can never acquire the sequence number generated by another user. After a sequence value is generated by one user, that user can continue to access that value regardless of whether the sequence is incremented by another user.

Create sequence

To create a new sequence:

- Select the **Database | New Object...** menu item.
- Select **Sequence** in the New Object dialog.

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- Edit sequence definition within the Sequence Editor.

  Hint: To create new sequence you can also right-click the **Sequences** node of the explorer tree and select the **New Sequence...** item from the popup menu.

To create a new sequence with the same properties as one of the existing sequences has:

- Select the **Database | Duplicate Object...** menu item.
- Follow the instructions of the Duplicate Object Wizard.

Edit sequence

To edit the existing sequence:

- Select the sequence for editing in the explorer tree (type the first letters of the sequence name for quick search).
- Right-click and select the **Edit Sequence <Sequence_Name>** item from the popup menu or simply double-click the sequence.
- Edit sequence definition and data on the appropriate tabs of the Sequence Editor.

Drop sequence

To drop a sequence:

- Select the sequence to drop in the explorer tree.
- Right-click and select the **Drop Sequence <Sequence_Name>** item from the popup menu.
- Confirm dropping in the dialog window.

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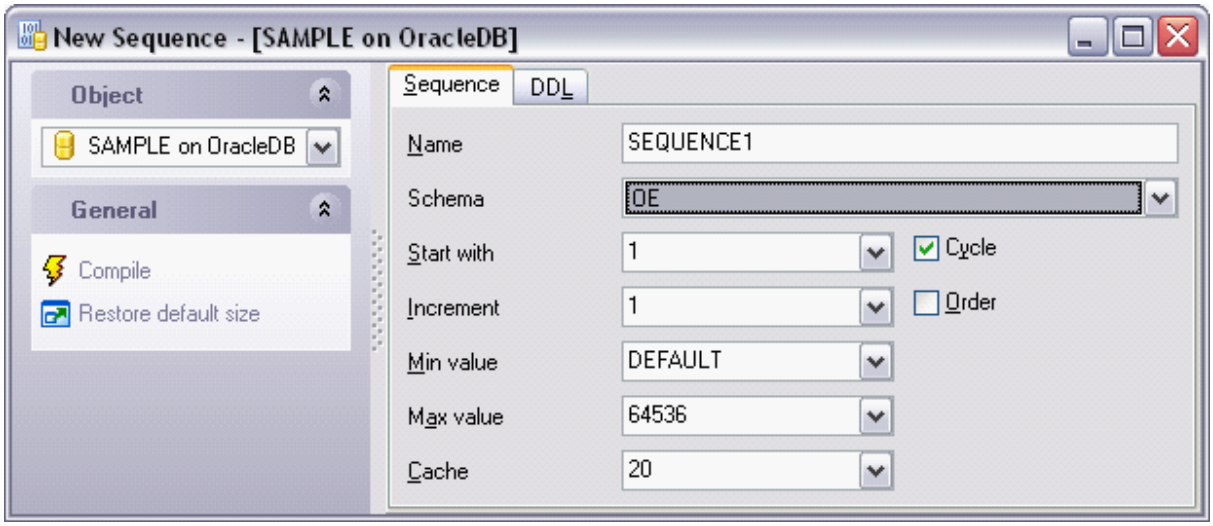
5.3.14.1 Sequences Editor

The **Sequence Editor** allows you to define sequence properties. It opens when you create a new sequence or edit the existing one (see Create Sequence and Edit Sequence for details).

To open a view in the **Sequence Editor**, double-click it in the Explorer Tree.

- Using navigation bar
- Editing sequence definition
- Editing object description
- Viewing DDL definition
- Browsing object dependencies



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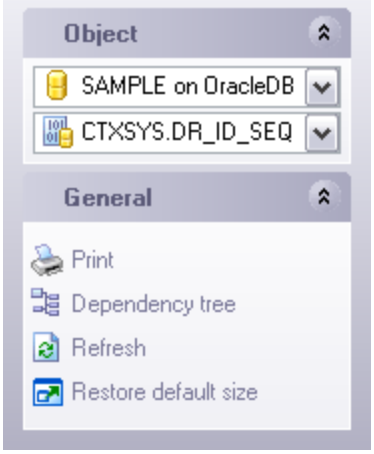
5.3.14.1.1 Using navigation bar

The navigation bar on the left allows you to:

Object bar:
- Select a database and a sequence for editing within the current window.

General bar:
- Compile the current sequence definition
- Print metadata of the current sequence
- View Dependency Tree for the sequence
- Refresh the content of the active tab
- Bring the window to its default size

The next bar displays various actions according to the current page of **Sequence Editor**.



5.3.14.1.2 Editing sequence definition

Name
Set the name of the new sequence in the edit field.

Increment
Specifies which value is added to the current sequence value to create a new value. A positive value will make an ascending sequence, a negative one a descending sequence. The default value is 1.

Min Value
Determines the minimum value a sequence can generate.

Max Value
Determines the maximum value for the sequence.

Cache
Specifies how many sequence numbers are to be preallocated and stored in memory for faster access. The minimum value is 1 (only one value can be generated at a time, i.e., no cache).

☑ **Cycle**
This option allows the sequence to wrap around when the maxvalue or minvalue has been

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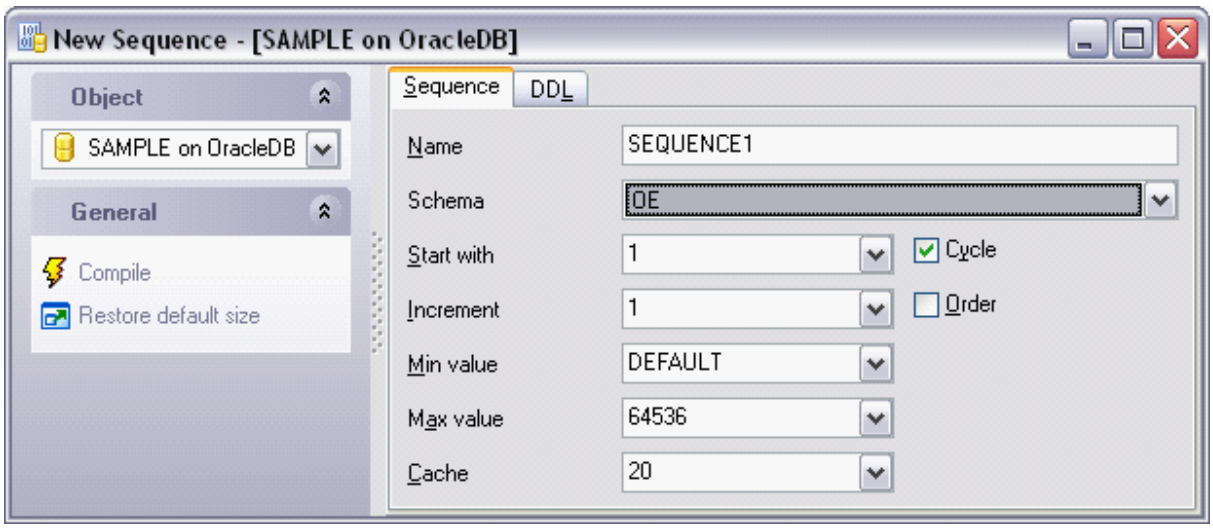
reached by an ascending or descending sequence respectively. If the limit is reached, the next number generated will be the minvalue or maxvalue, respectively. Otherwise, any calls to nextval after the sequence has reached its maximum value will return an error.

☑ **Order**
Use this option to guarantee that sequence numbers are generated in order of request. This clause is useful if you are using the sequence numbers as timestamps. Guaranteeing order is usually not important for sequences used to generate primary keys.



5.3.15 Clusters

A **cluster** is a schema object that contains data from one or more tables, all of which have one or more columns in
common. Oracle stores together all the rows from all the tables that share the same cluster key.

Create cluster

To create a new cluster:

- Select the **Database | New Object...** menu item.
- Select **Cluster** in the New Object dialog.
- Edit cluster definition within the Cluster Editor.

> **Hint**: To create new cluster you can also right-click the **Clusters** node of the explorer tree and select the **New Cluster...** item from the popup menu.

To create a new cluster with the same properties as one of the existing clusters has:

- Select the **Database | Duplicate Object...** menu item.
- Follow the instructions of the Duplicate Object Wizard.

Edit cluster

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To edit the existing cluster:

- Select the cluster for editing in the explorer tree (type the first letters of the cluster name for quick search).
- Right-click and select the **Edit Cluster <Cluster_Name>** item from the popup menu or simply double-click the cluster.
- Edit cluster definition and data on the appropriate tabs of the Cluster Editor.

Drop cluster

To drop a cluster:

- Select the cluster to drop in the explorer tree.
- Right-click and select the **Drop Cluster <Cluster_Name>** item from the popup menu.
- Confirm dropping in the dialog window.

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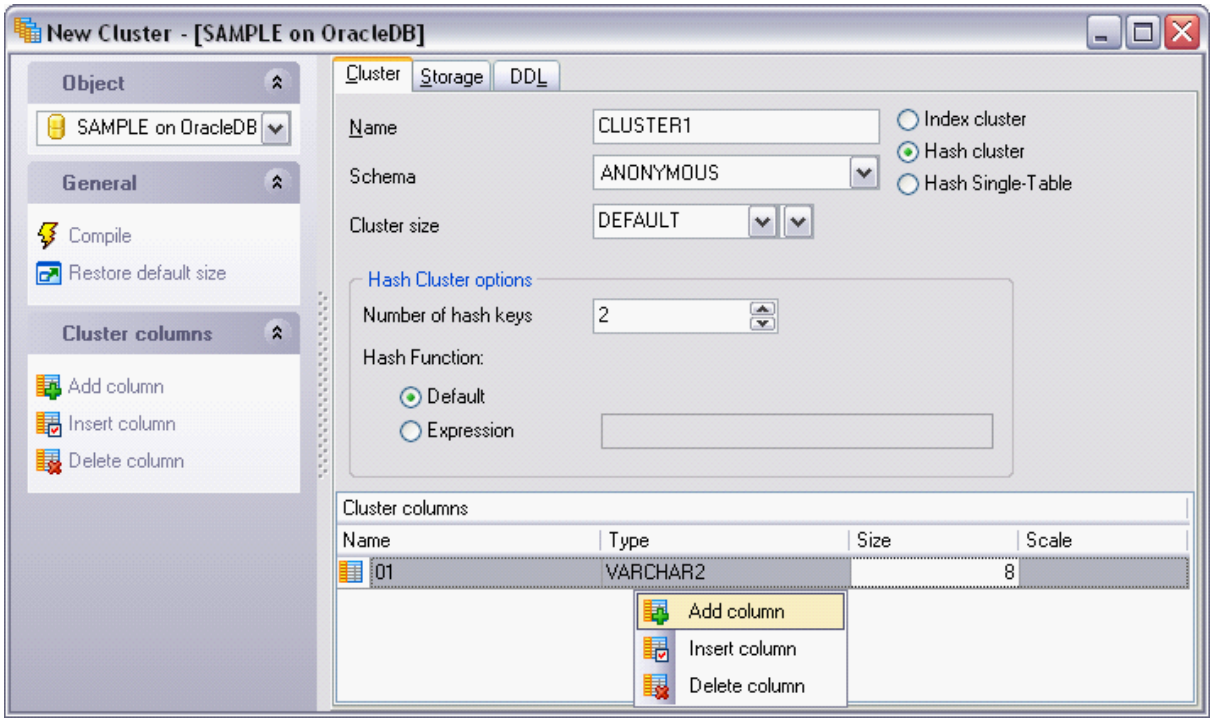
5.3.15.1 Cluster Editor

The **Cluster Editor** allows you to define default properties. It opens when you create a new default or edit the existing one (see Create Cluster and Edit Cluster for details).

To open a view in the **Cluster Editor**, double-click it in the explorer tree.

- Using navigation bar
- Editing cluster definition
- Object storage attributes
- Editing object description
- Viewing DDL definition
- Browsing object dependencies



5.3.15.1.1 Using navigation bar

The navigation bar on the left allows you to:

Object bar:
- Select a database and a cluster for editing within the current window.

General bar:
- Compile the current cluster

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- Print metadata of the current cluster
- View Dependency Tree for the cluster
- Refresh the content of the active tab
- Bring the window to its cluster size

5.3.15.1.2 Editing cluster definition

Name
Set the name of the new cluster.

Schema
Is the name of the schema to which the object belongs.

Cluster size
Specify the amount of space in bytes reserved to store all rows with the same cluster key value or the same hash value.

Define the type of the cluster:
In an **Index cluster**, Oracle stores together rows having the same cluster key value. Each distinct cluster key value
is stored only once in each data block, regardless of the number of tables and rows in which it occurs.

In a **Hash cluster**, Oracle stores together rows that have the same hash key value. The hash value for a row is the value returned by the hash function of the cluster.

Hash Single-Table indicates that the cluster is a type of hash cluster containing only one table. This cluster type can provide faster access to rows than would result if the table were not part of a cluster.

If you choose to to create a hash cluster and specify the number of hash values for the hash cluster.

Hash function
Specify an expression to be used as the hash function for the hash cluster or select to use default values.

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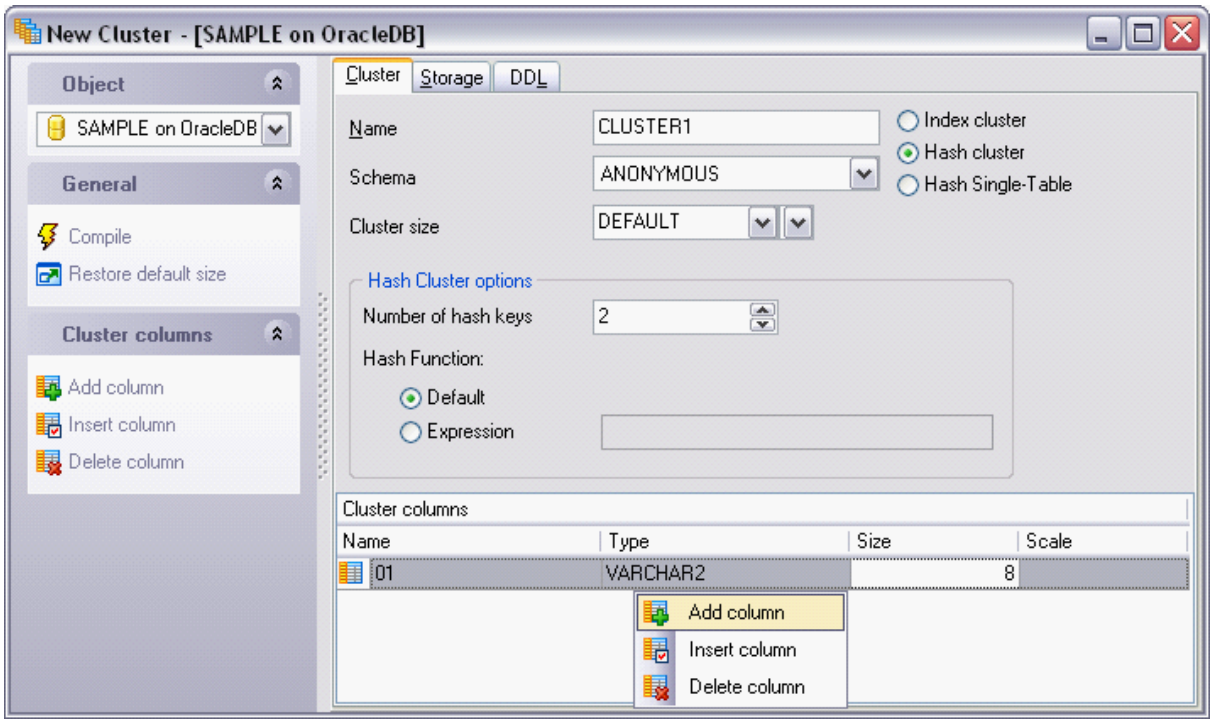

5.3.16 Materialized Views

A materialized view is a database object that contains the results of a query. The FROM clause of the query can name tables, views, and other materialized views. Collectively these objects are called **master tables** (a replication term) or **detail tables** (a data warehousing term).

Create materialized view

To create a new materialized view:

- Select the **Database | New Object...** menu item.
- Select **Materialized View** in the New Object dialog.
- Edit materialized view definition within the Materialized View Editor.

> **Hint**: To create new materialized view you can also right-click the **Materialized Views** node of the explorer tree and select the **New Materialized View...** item from the popup menu.

To create a new materialized view with the same properties as one of the existing materialized views has:

- Select the **Database | Duplicate Object...** menu item.
- Follow the instructions of the Duplicate Object Wizard.

Edit materialized view

To edit the existing materialized view:

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- Select the materialized view for editing in the explorer tree (type the first letters of the materialized view name for quick search).
- Right-click and select the **Edit Materialized View <Materialized View_Name>** item from the popup menu or simply double-click the materialized view.
- Edit materialized view definition and data on the appropriate tabs of the Materialized View Editor.

Drop materialized view

To drop a materialized view:

- Select the materialized view to drop in the explorer tree.
- Right-click and select the **Drop Materialized View <Materialized View_Name>** item from the popup menu.
- Confirm dropping in the dialog window.

5.3.16.1 Materialized View Editor

The **Materialized View Editor** allows you to define materialized view properties. It opens when you create a new materialized view or edit the existing one (see Create Materialized View and Edit Materialized View for details).

- Using navigation bar
- Editing materialized view definition
- Object storage attributes
- Viewing Materialized View fields
- Setting Refresh parameters
- Setting USING INDEX parameters
- Viewing Materialized View data
- Editing object description
- Viewing DDL definition
- Browsing object dependencies

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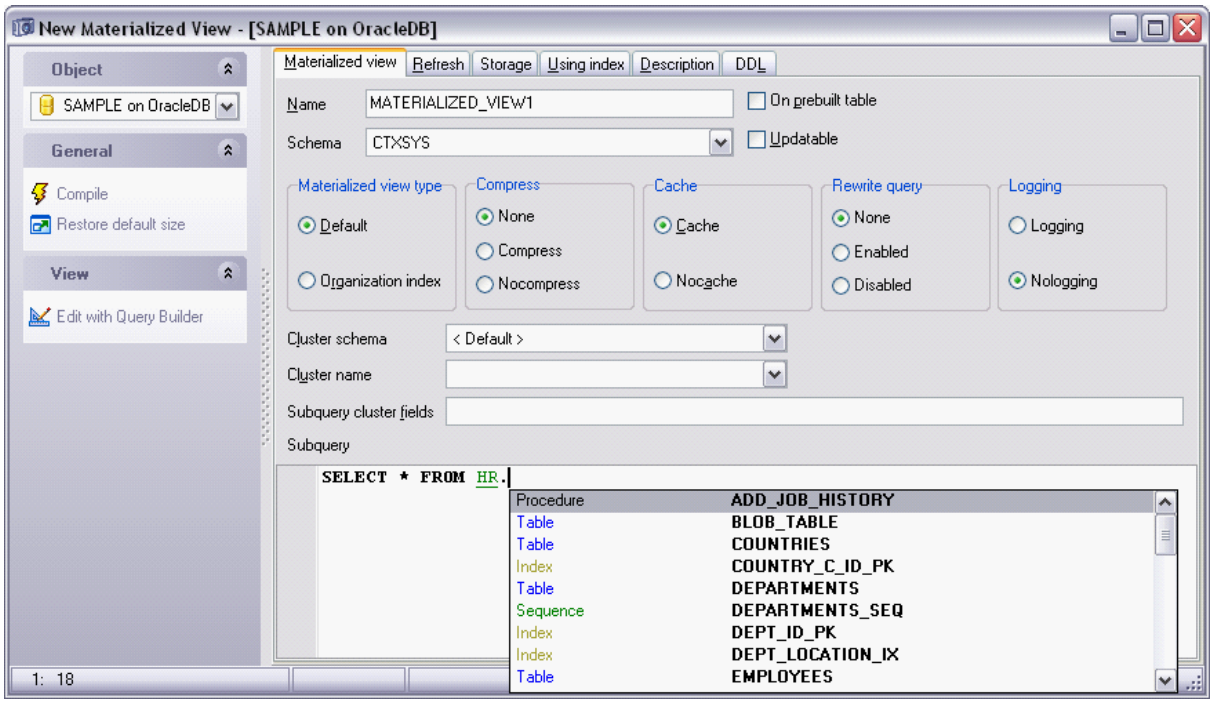

5.3.16.1.1 Using navigation bar

The navigation bar on the left allows you to:

Object bar:
- Select a database and a materialized view for editing within the current window.

General bar:
- Compile the current materialized view definition
- Print metadata of the current materialized view
- View Dependency Tree for the materialized view
- Refresh the content of the active tab
- Bring the window to its default size

5.3.16.1.2 Editing Materialized View

Name
Specify the name of the materialized view to be created.

Schema
Specify the schema to contain the materialized view. If you omit schema, then Oracle creates the materialized view in your schema.

On prebuilt table
The option lets you register an existing table as a preinitialized materialized view. This clause is particularly useful for registering large materialized views in a data warehousing environment.

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Select **Updatable** to allow a subquery, primary key, object, or rowid materialized view to be updated.

The **Organisation index** lets you create an index-organized materialized view. In such a materialized view, data rows are stored in an index defined on the primary key of the materialized view.

Compress
Use these options to instruct the database whether to compress data segments to reduce disk and memory use.

Cache
For data that will be accessed frequently, **Cache** specifies that the blocks retrieved for this table are placed at the most recently used end of the least recently used (LRU) list in the buffer cache when a full table scan is performed. This attribute is useful for small lookup tables. **Nocache** specifies that the blocks are placed at the least recently used end of the LRU list.

Rewrite query
This group lets you specify whether the materialized view is eligible to be used for query rewrite.
Specify **Enable** to enable the materialized view for query rewrite.

Specify **Logging** or **Nologging** to establish the logging characteristics for the materialized view. The default is the logging characteristic of the tablespace in which the materialized view resides.

Cluster
The **Cluster** group lets you create the materialized view as part of the specified cluster. A cluster materialized view uses the space allocation of the cluster.

In the **Subquery** editor you need to create the view definition as SQL statement, so it is enough to simply edit the whole definition in the editor area to make changes, and click the Compile view item on the navigation bar to apply it to the view on the server.

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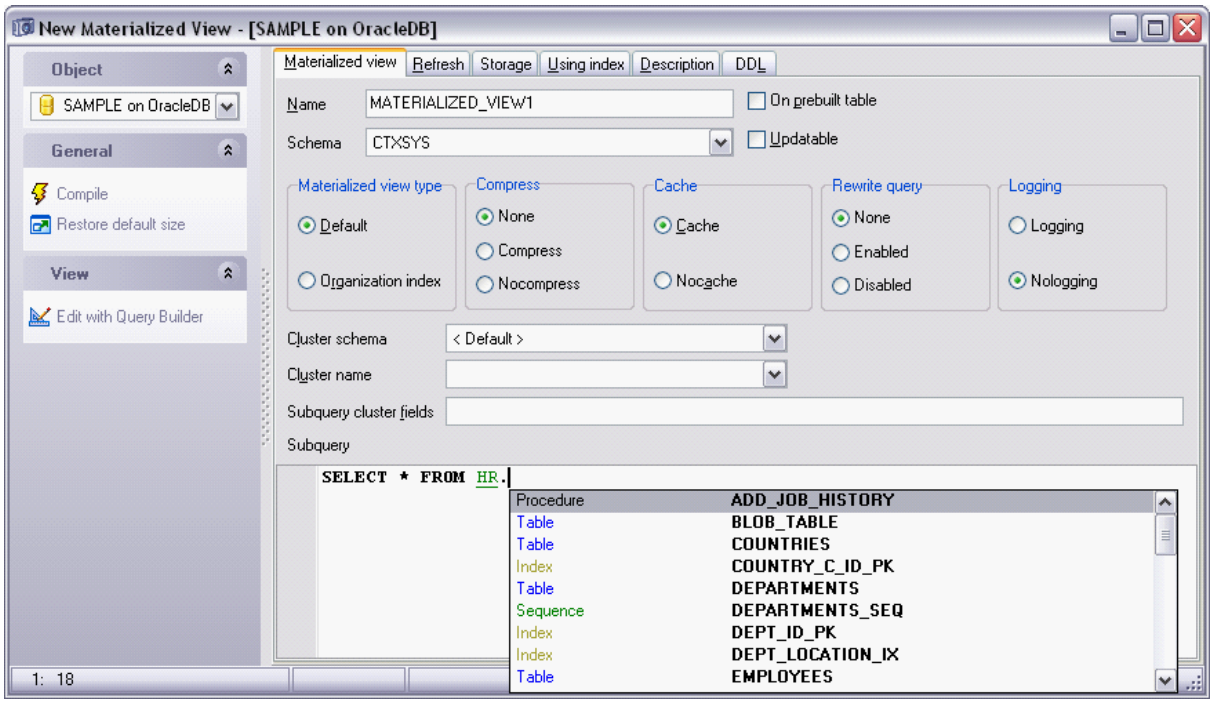

5.3.16.1.3 Viewing Materialized View fields

The **Fields** tab allows you to view the materialized view fields. Note that the tab is only appears after compiling a materialized view.

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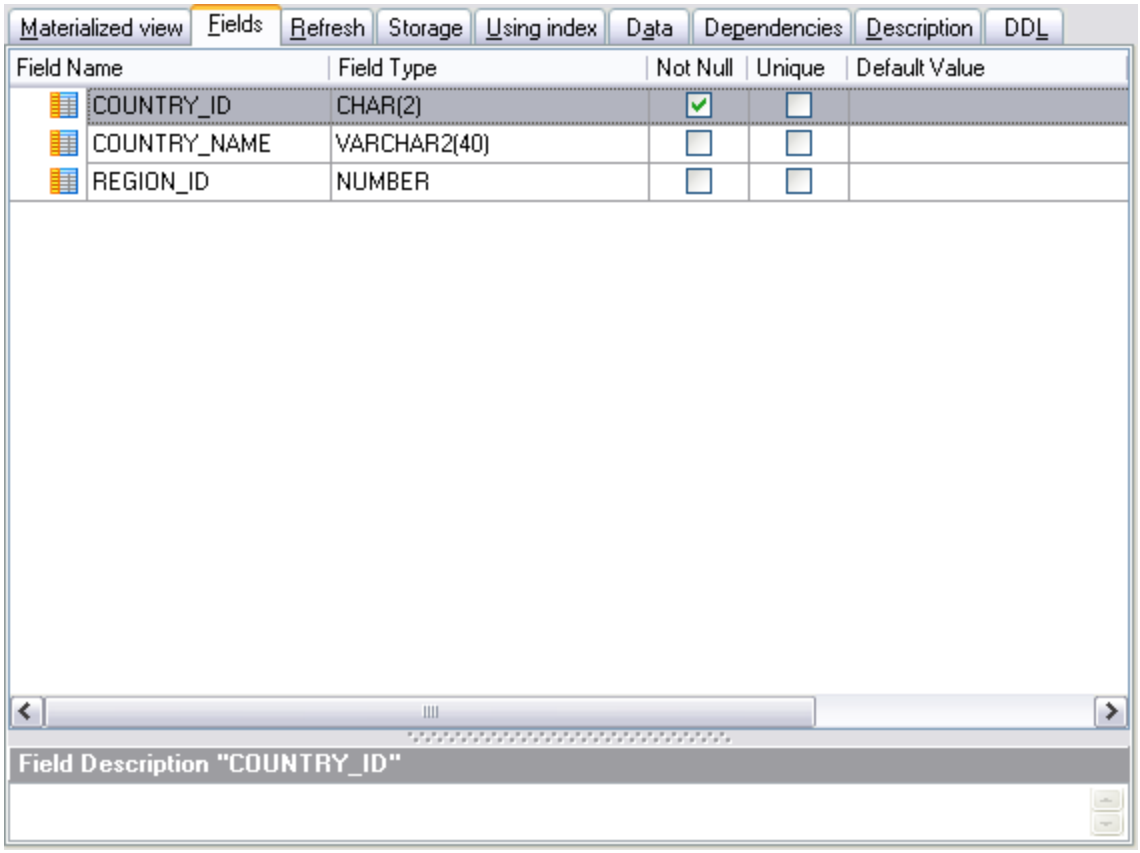

5.3.16.1.4 Setting Refresh parameters

This tab allows you to specify the default methods, modes, and times for the database to refresh the materialized view. If the master tables of a materialized view are modified, then the data in the materialized view must be updated to make the materialized view accurately reflect the data currently in its master tables. Here you can schedule the times and specify the method and mode for the database to refresh the materialized view.

Refresh type
Correlates with the corresponding server refresh methods - NEVER, FAST, COMPLETE and FORCE.

Refresh time type
Correlates with the corresponding server refresh methods - ON COMMIT, ON DEMAND, AUTOMATIC.

Refresh method
Specify **Primary key** to create a primary key materialized view. Primary key materialized views allow materialized view master tables to be reorganized without affecting the eligibility of the materialized view for fast refresh.
Specify **RowID** to create a rowid materialized view. **RowID** materialized views are useful if the materialized view does not include all primary key columns of the master tables.

Start with
Specify a datetime expression for the first automatic refresh time.

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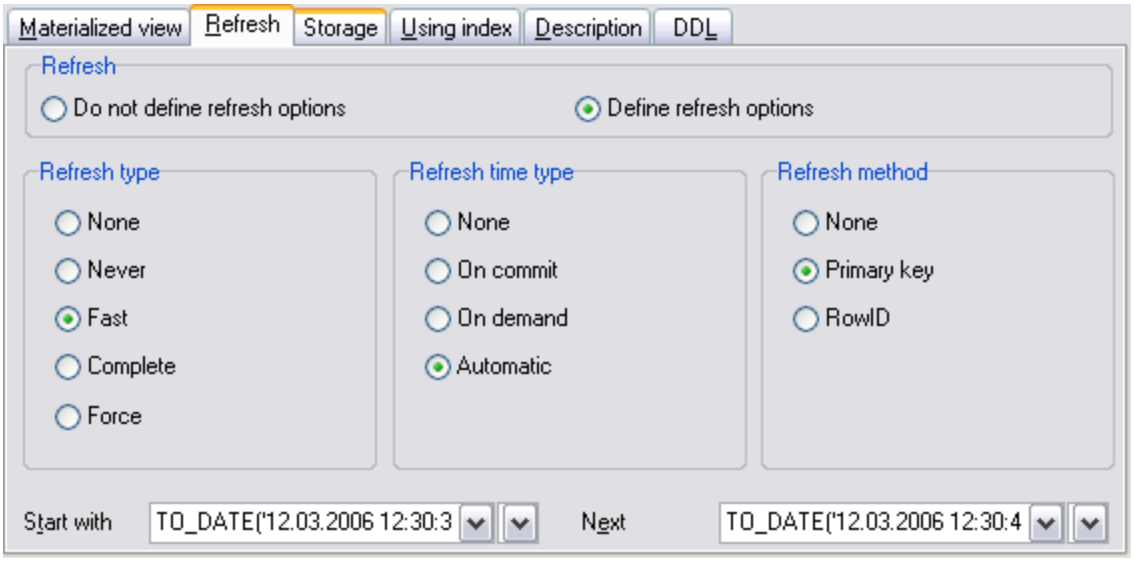
Next
Specify a datetime expression for calculating the interval between automatic refreshes.



5.3.16.1.5 Setting USING INDEX parameters

The **Using index** tab lets you establish the value of the INITRANS and STORAGE parameters for the default index Oracle uses to maintain the materialized view data. If **Using index** is not specified, then default values are used for the index. Oracle uses the default index to speed up incremental (FAST) refresh of the materialized view.
You cannot specify the **Percent used** parameter here.

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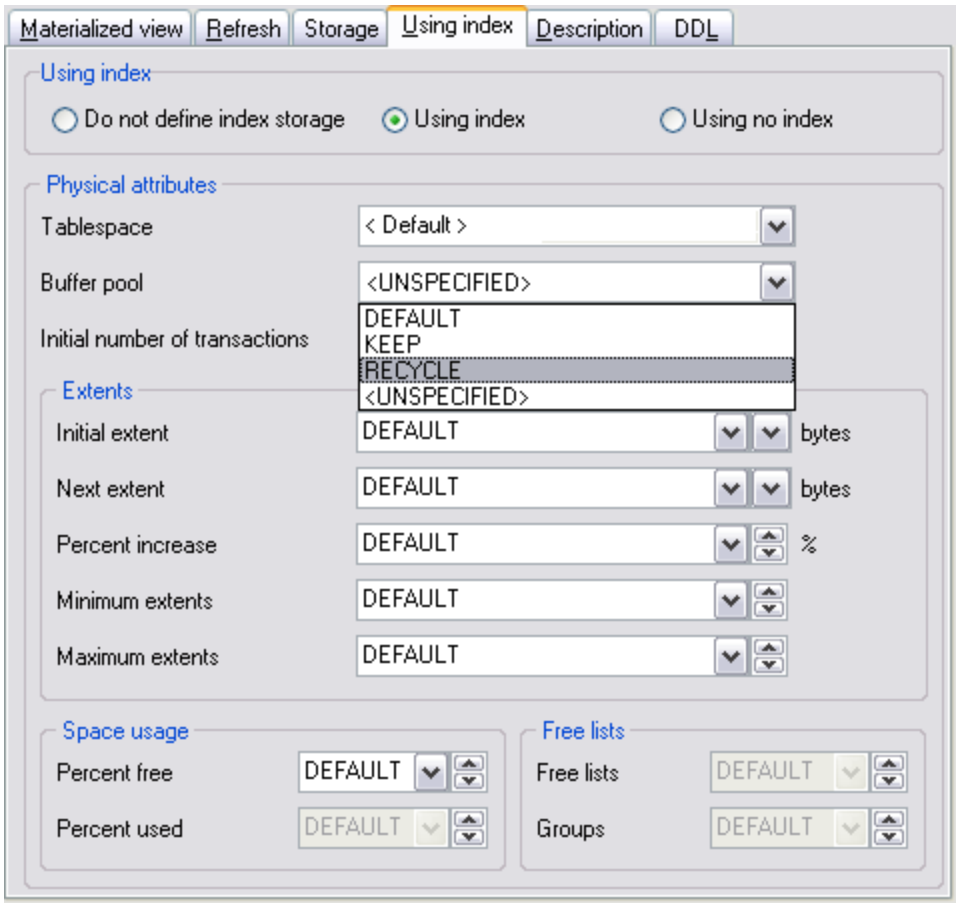

5.3.16.1.6 Viewing Materialized View data

The **Data** tab allows you to view the data containing in the materialized view. Note that the tab is only appears after compiling a materialized view.

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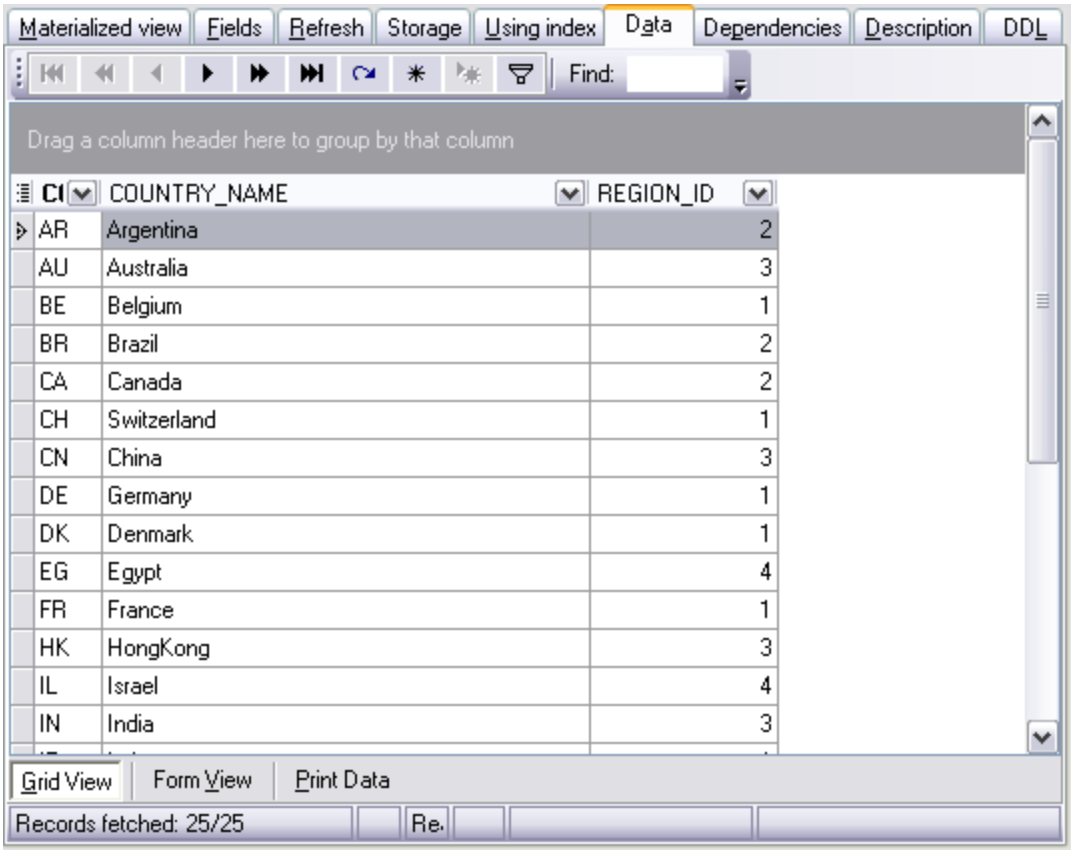

5.3.17 Materialized View Logs

A **materialized view log** is a table associated with the master table of a materialized view.

Create materialized view log

To create a new materialized view log:

- Select the **Database | New Object...** menu item.
- Select **Materialized View Log** in the New Object dialog.
- Edit materialized view log definition within the Materialized View Log Editor.

> **Hint**: To create new materialized view log you can also right-click the **Materialized View Logs** node of the explorer tree and select the **New Materialized View Log...** item from the popup menu.

To create a new materialized view log with the same properties as one of the existing materialized view logs has:

- Select the **Database | Duplicate Object...** menu item.
- Follow the instructions of the Duplicate Object Wizard.

Edit materialized view log

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To edit the existing materialized view log:

- Select the materialized view log for editing in the explorer tree (type the first letters of the materialized view log name for quick search).
- Right-click and select the **Edit Materialized View Log <Materialized View Log_Name>** item from the popup menu or simply double-click the materialized view log.
- Edit materialized view log definition and data on the appropriate tabs of the Materialized View Log Editor.

Drop materialized view log

To drop a materialized view log:

- Select the materialized view log to drop in the explorer tree.
- Right-click and select the **Drop Materialized View Log <Materialized View Log_Name>** item from the popup menu.
- Confirm dropping in the dialog window.

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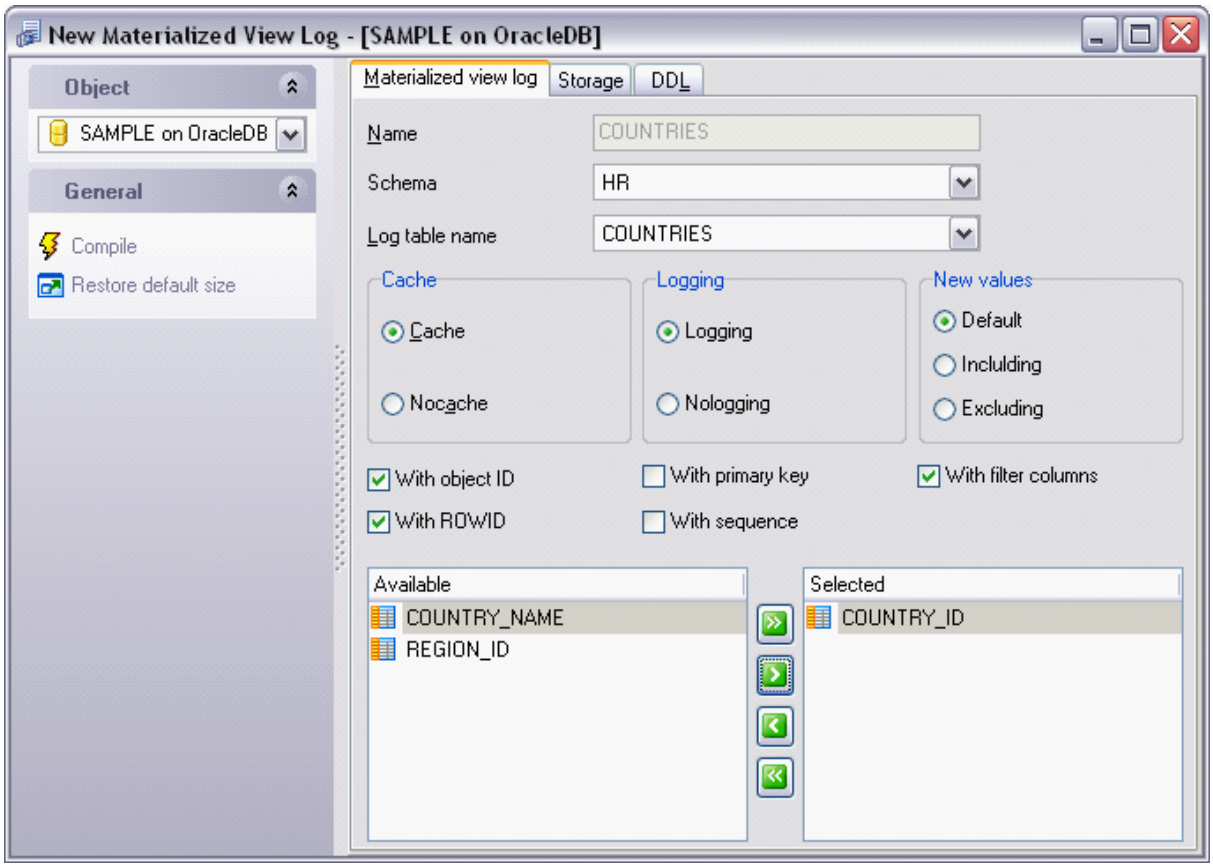
5.3.17.1 Materialized View Log Editor

The **Materialized View Log Editor** allows you to define materialized view log properties. It opens when you create a new materialized view log or edit the existing one (see Create Materialized View Log and Edit Materialized View Log for details).

- Using navigation bar
- Editing Materialized View Log definition
- Object storage attributes
- Editing object description
- Viewing DDL definition
- Browsing object dependencies



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5.3.17.1.1 Using navigation bar

The navigation bar on the left allows you to:

Object bar:
- Select a database and a materialized view log for editing within the current window.

General bar:
- Compile the current materialized view log definition
- Print metadata of the current materialized view log
- View Dependency Tree for the materialized view log
- Refresh the content of the active tab
- Bring the window to its default size

5.3.17.1.2 Editing Materialized View Log definition

Name
Specify the name of the materialized view log to be created.

Schema
Specify the schema containing the materialized view log master table.

Table
Specify the name of the master table for which the materialized view log is to be created.

Cache
For data that will be accessed frequently, **Cache** specifies that the blocks retrieved for this log are placed at the most recently used end of the least recently used (LRU) list in the buffer cache when a full table scan is performed. This attribute is useful for small lookup tables. **Nocache** specifies that the blocks are placed at the least recently used end of the LRU list.

Logging
Specify either **Logging** or **Nologging** to establish the logging characteristics of the tablespace in which the materialized view log resides.

New values
This group lets you determine whether Oracle saves both old and new values for update DML operations in the materialized view log.

With ...
Use the **With** group to indicate whether the materialized view log should record the primary key, rowid, object ID, or a combination of these row identifiers when rows in the master are changed.

Specify **With object ID** to indicate that the system-generated or user-defined object identifier of every modified row should be recorded in the materialized view log.

Specify **With primary key** to indicate that the primary key of all rows changed should be recorded in the materialized view log.

Specify **With ROWID** to indicate that the rowid of all rows changed should be recorded in

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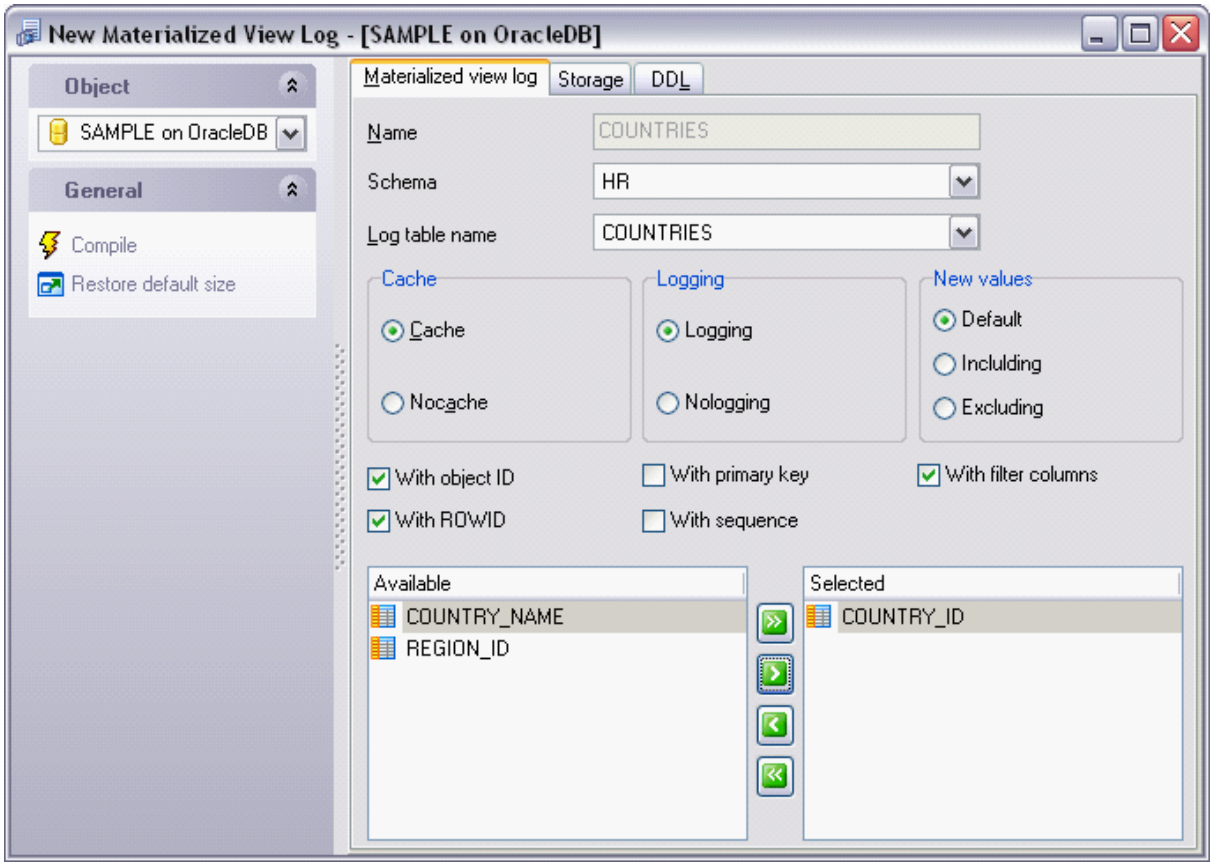
the materialized view log.

Specify **With sequence** to indicate that a sequence value providing additional ordering information should be recorded in the materialized view log. Sequence numbers are necessary to support fast refresh after some update scenarios.

Specify **With filter columns** for the columns whose values you want to be recorded in the materialized view log for all rows that are changed.

Fields for materialized view log
To specify the fields whose values are to be recorded into the materialized view log, move them from the **Available Fields** list to the **Selected fields** by double-clicking or dragging them. To remove the fields from the index, move them back in the same way. You can also use the arrow buttons to move the selected fields (multiple fields are selected by *Ctrl* or *Shift*).



5.3.18 Synonyms

Synonym is an alternative name for a table, view, sequence, procedure, stored function, package, materialized view, Java class schema object, user-defined object type, or another synonym.

Create synonym

To create a new synonym:

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- Select the **Database | New Object...** menu item.
- Select **Synonym** in the New Object dialog.
- Edit synonym definition within the Synonym Editor.

Hint: To create new synonym you can also right-click the **Synonyms** node of the explorer tree and select the **New Synonym...** item from the popup menu.

To create a new synonym with the same properties as one of the existing synonyms has:

- Select the **Database | Duplicate Object...** menu item.
- Follow the instructions of the Duplicate Object Wizard.

Edit synonym

To edit the existing synonym:

- Select the synonym for editing in the explorer tree (type the first letters of the synonym name for quick search).
- Right-click and select the **Edit Synonym <Synonym_Name>** item from the popup menu or simply double-click the synonym.
- Edit synonym definition and data on the appropriate tabs of the Synonym Editor.

Drop synonym

To drop a synonym:

- Select the synonym to drop in the explorer tree.
- Right-click and select the **Drop Synonym <Synonym_Name>** item from the popup menu.
- Confirm dropping in the dialog window.

5.3.18.1 Synonym Editor

The **Synonym Editor** allows you to define synonym properties. It opens when you create a new sequence or edit the existing one (see Create Synonym and Edit Synonym for details).

To open a view in the **Synonym Editor**, double-click it in the explorer tree.

- Using navigation bar
- Editing synonym definition
- Viewing DDL definition
- Browsing object dependencies

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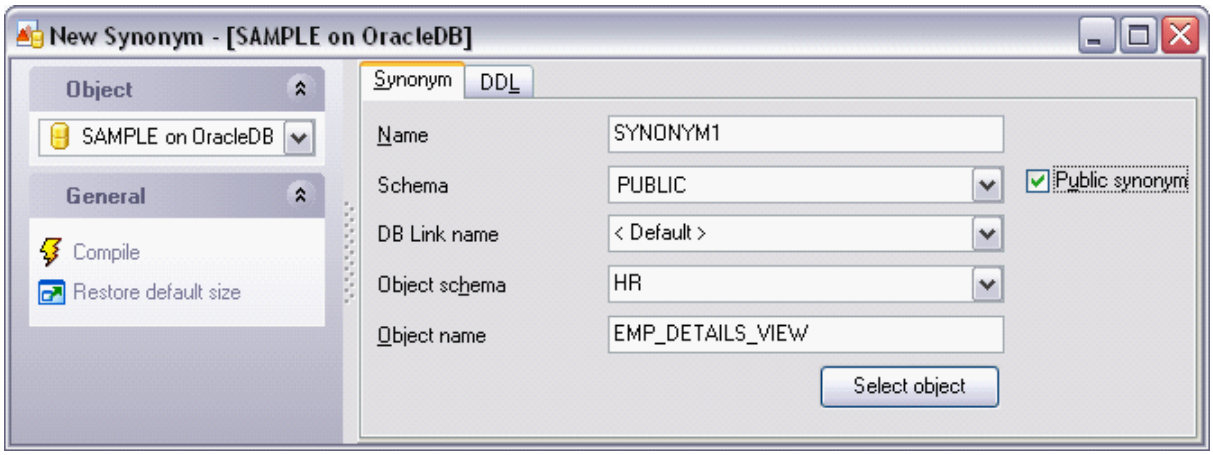

5.3.18.1.1 Using navigation bar

The navigation bar on the left allows you to:

Object bar:
- Select a database and a synonym for editing within the current window.

General bar:
- Compile the current synonym definition
- Print metadata of the current synonym
- View Dependency Tree for the synonym
- Refresh the content of the active tab
- Bring the window to its default size

5.3.18.1.2 Editing synonym definition

Synonym name
Is the name of the new synonym.

Schema
Specifies the schema in which the synonym is created.

Public synonym
Check this option to create a public synonym. Public synonyms are accessible to all users. However each user must have appropriate privileges on the underlying object in order to use the synonym.

DB Link name
You can specify a complete or partial database link to create a synonym for a schema object on a remote database where the object is located.

Object schema
Is the schema containing the base object that the synonym references.

Object name

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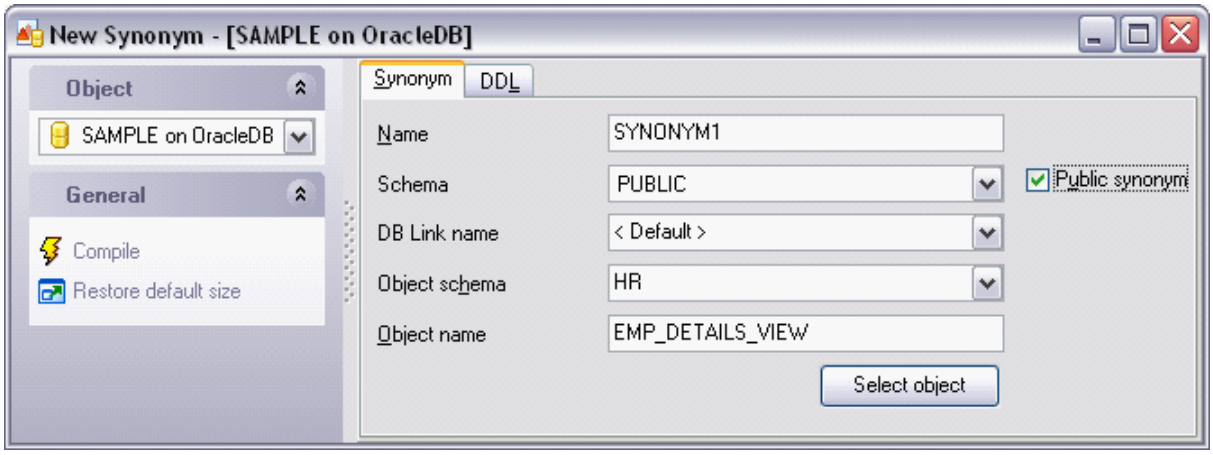
Is the base object that the synonym references.

Use the **Select object** button to select manually the object that the synonym references.



5.3.19 Database Links

A **database link** is a schema object in one database that enables you to access objects on another database. The other database need not be an Oracle system. However, to access non-Oracle systems you must use Oracle Heterogeneous Services.

Create Database Link

To create a new database link:

- Select the **Database | New Object...** menu item.
- Select **Database Link** in the New Object dialog.
- Edit database link definition within the Database Link Editor.

> **Hint**: To create new database link you can also right-click the **Database Links** node of the explorer tree and select the **New Database Link...** item from the popup menu.

To create a new database link with the same properties as one of the existing database links has:

- Select the **Database | Duplicate Object...** menu item.
- Follow the instructions of the Duplicate Object Wizard.

Edit Database Link

To edit the existing database link:

- Select the database link for editing in the explorer tree (type the first letters of the database link name for quick search).
- Right-click and select the **Edit Database Link <Database Link_Name>** item from the popup menu or simply double-click the database link.
- Edit database link definition and data on the appropriate tabs of the Database Link Editor.

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Drop Database Link

To drop a database link:

- Select the database link to drop in the explorer tree.
- Right-click and select the **Drop Database Link <Database Link_Name>** item from the popup menu.
- Confirm dropping in the dialog window.

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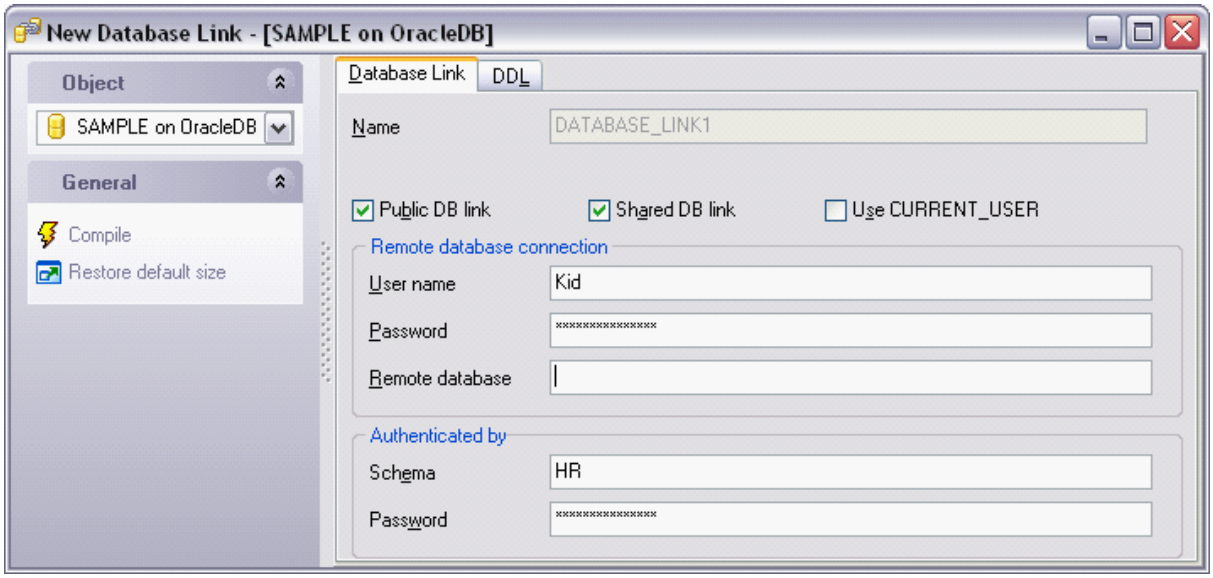
5.3.19.1 Database Link Editor

The **Database Link Editor** allows you to define database link properties. It opens when you create a new type or edit the existing one (see Create Database Link and Edit Database Link for details).

To open a database link in the **Database Link Editor**, double-click it in the explorer tree.

- Using navigation bar
- Editing database link definition
- Editing object description
- Viewing DDL definition
- Browsing object dependencies



5.3.19.1.1 Using navigation bar

The navigation bar on the left allows you to:

Object bar:
- Select a database and a type for editing within the current window.

General bar:
- Compile the current database link
- Print metadata of the current database link
- View Dependency Tree for the database link
- Refresh the content of the active tab
- Bring the window to its default size

5.3.19.1.2 Editing DB Link definition

Name
If you are creating a new DB link, type a unique name to be used across the database to represent the DB link.

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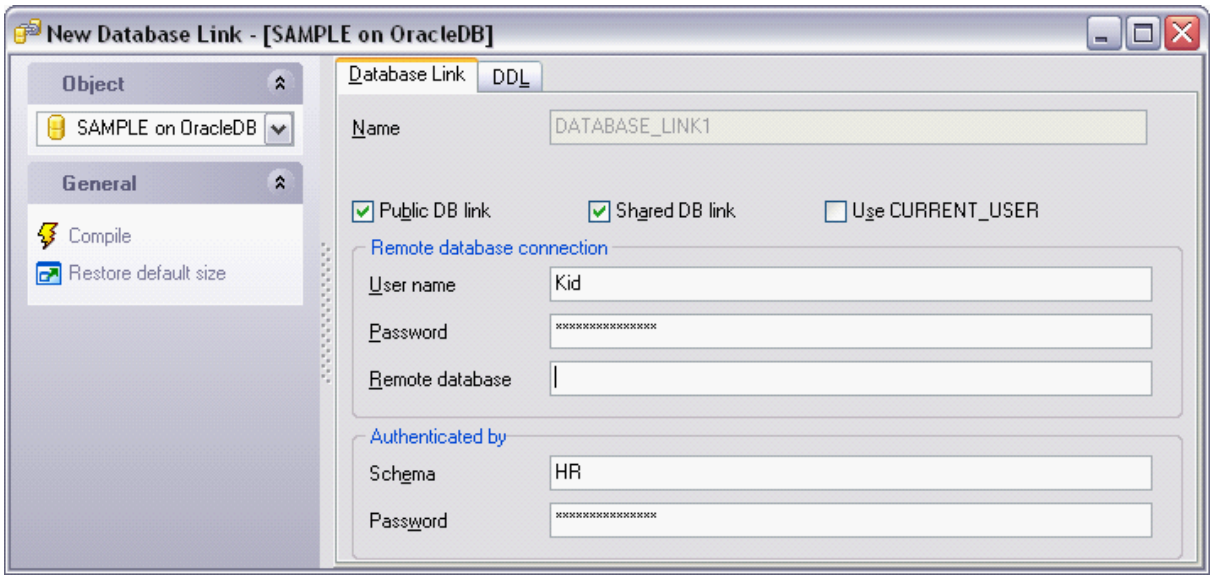
Public DB link
Use this option to create a public database link available to all users.

Shared DB link
Check the option to use a single network connection to create a public database link that can be shared among multiple users.

Use CURRENT_USER
Use this option to create a current user database link. The current user must be a global user with a valid account on the remote database.

Remote database connection
This group of controls lets you enable a connection to the remote database.

Authenticated by
Specify the username and password on the target instance. These parameters authenticate the user to the remote server and are required for security.



5.3.20 Object Types

Use the Object Type Editor to create the specification of an object type, a SQLJ object type, or an incomplete object type.

Create object type

To create a new object type:

- Select the **Database | New Object...** menu item.
- Select **Object Type** in the New Object dialog.
- Edit object type definition within the Object Type Editor.

Hint: To create new object type you can also right-click the **Object Types** node of the explorer tree and select the **New Object Type...** item from the popup menu.

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To create a new object type with the same properties as one of the existing object types has:

- Select the **Database | Duplicate Object...** menu item.
- Follow the instructions of the Duplicate Object Wizard.

Edit object type

To edit the existing object type:

- Select the object type for editing in the explorer tree (type the first letters of the object type name for quick search).
- Right-click and select the **Edit Object Type <Object Type_Name>** item from the popup menu or simply double-click the object type.
- Edit object type definition and data on the appropriate tabs of the Object Type Editor.

Drop object type

To drop a object type:

- Select the object type to drop in the explorer tree.
- Right-click and select the **Drop Object Type <Object Type_Name>** item from the popup menu.
- Confirm dropping in the dialog window.

5.3.20.1 Object Type Editor

The **Object Type Editor** allows you to define object type properties. It opens when you create a new object type or edit the existing one (see Create object type and Edit object type for details).

- Using navigation bar
- Editing object type definition
- Editing object description
- Viewing DDL definition
- Browsing object dependencies

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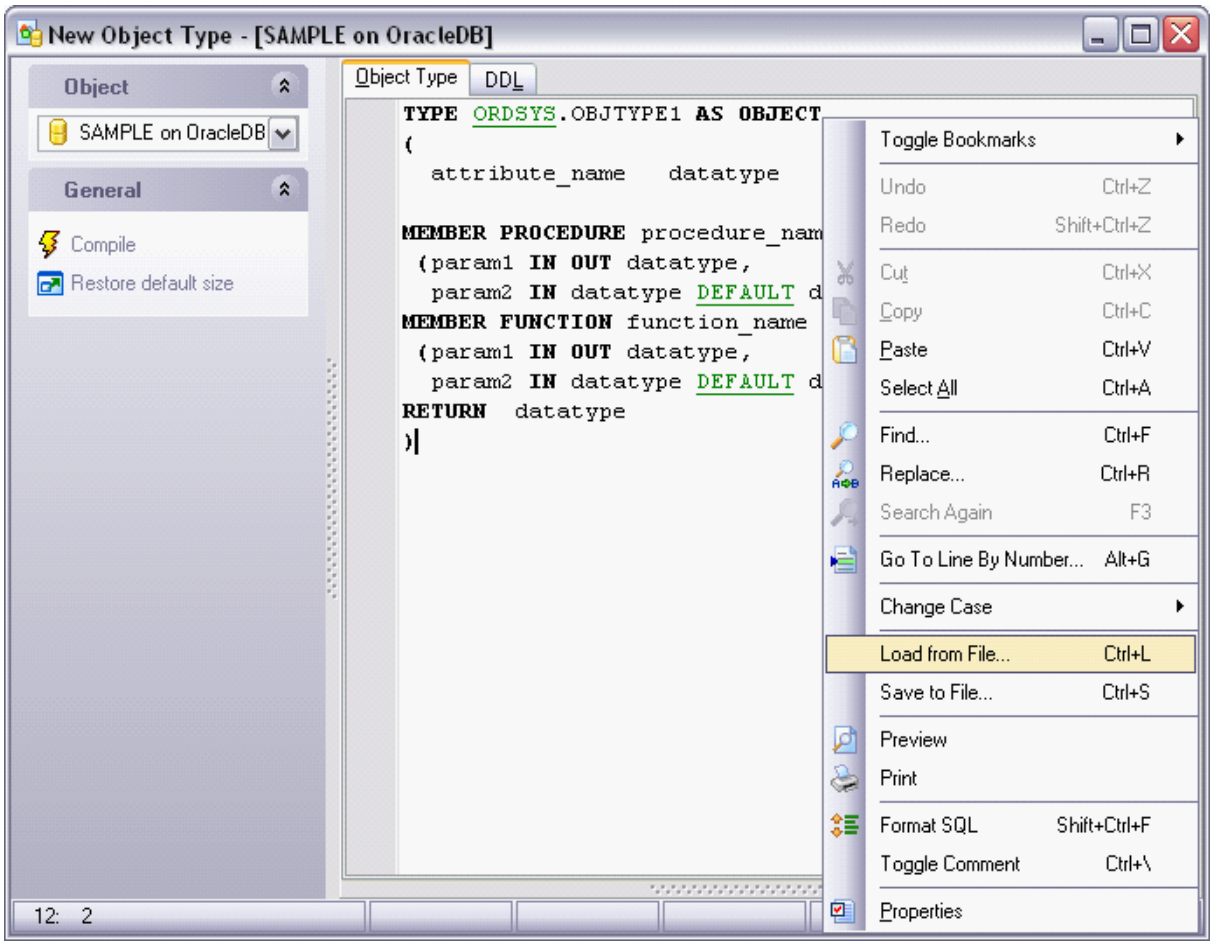

5.3.20.1.1 Using navigation bar

The navigation bar on the left allows you to:

Object bar:
- Select a database and a object type for editing within the current window.

General bar:
- Compile the current object type definition
- Print metadata of the current object type
- View Dependency Tree for the object type
- Refresh the content of the active tab
- Bring the window to its default size

The next bar displays various actions according to the current page of **Object Type Editor**.

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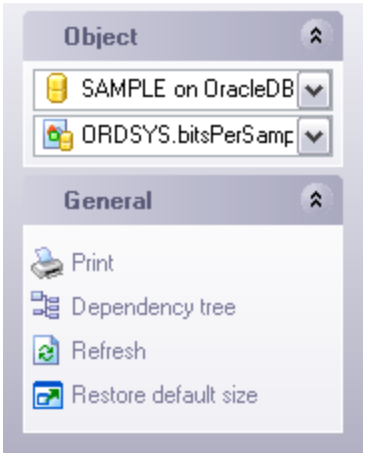
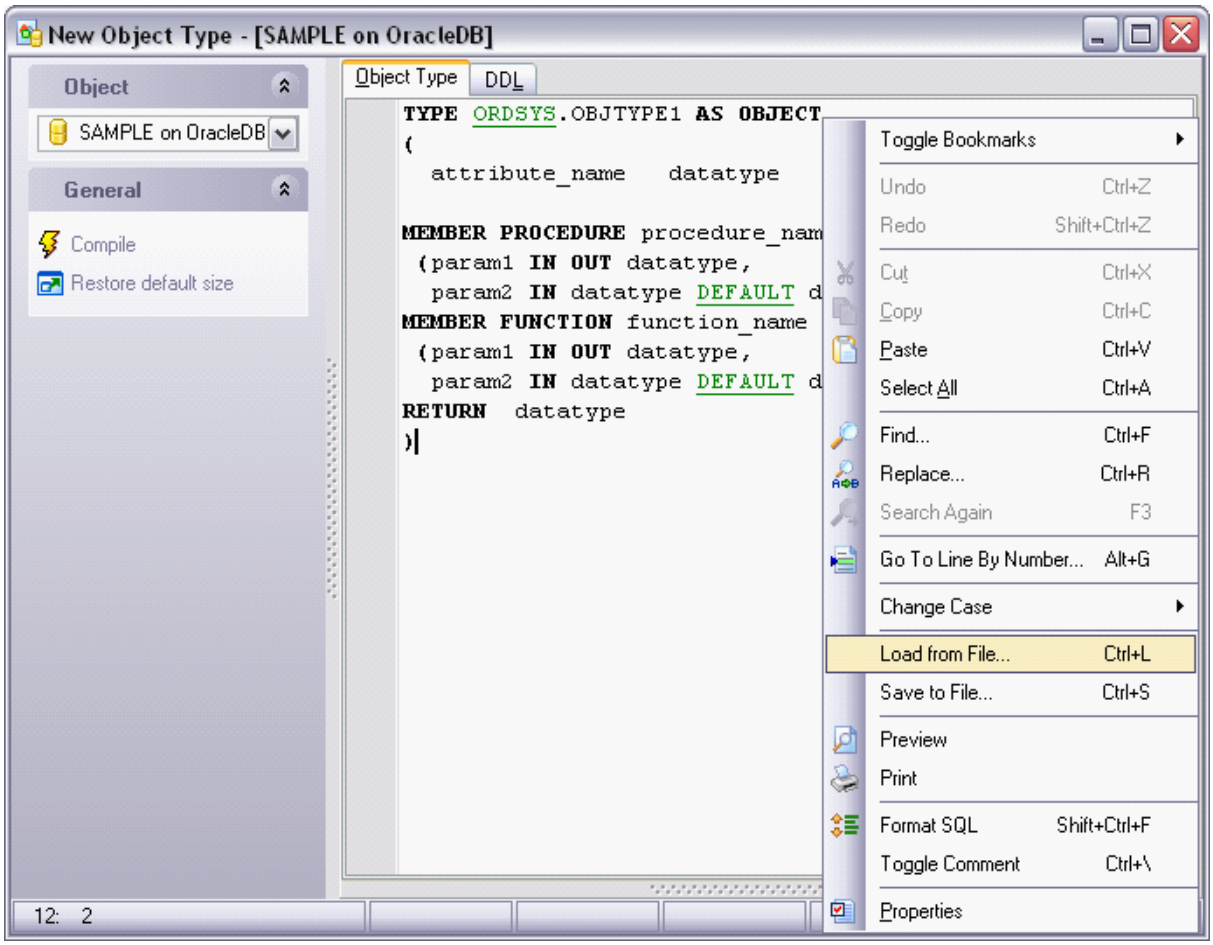


5.3.20.1.2 Editing Object Type definition

Use the Object Type Editor window to create a user-defined object type. The variables that form the data structure are called attributes. The member subprograms that define the behavior of the object are called methods. The keywords AS OBJECT are required when creating an object type.



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5.3.21 Object Type Bodies

You can create an **object type body** to define or implement the member methods defined in the object type specification. The object type body defines the name of the object type, its attributes, methods, and other properties. The object type body contains the code for the methods that implement the type.

Create object type body

To create a new object type body:

- Select the **Database | New Object** menu item.
- Select **Object Type Body** in the New Object window.
- Edit object type body properties and fields on the appropriate tabs of the Object Type Body Editor.

Hint: To create a new object type body you can also right-click the **Object Type Body** node of the explorer tree and select the **New Object Type Body...** item from the popup menu.

To create a new object type body with the same properties as one of the existing object has:

- Select the **Database | Duplicate Object** menu item.
- Follow the instructions of the Duplicate Object Wizard.

The Duplicate Object window allows you to select the database to create the new object type body in and to edit the result SQL statement for creating the object type body.

Edit object type body

To edit the existing object type body:

- Select the object type body for editing in the explorer tree (type the first letters of the object type body name for quick search).
- Right-click and select the **Edit Object Type Body <Object_Type_Body_Name>** item in the popup menu or simply double-click the object type body.
- Edit schema subobjects and data on the appropriate tabs of the Object Type Body Editor.

Drop object type body

To drop a object type body:

- Select the object type body for dropping in the explorer tree.
- Right-click and select the **Drop Object Type Body <Object_Type_Body_Name>** item from the popup menu.
- Confirm dropping in the dialog window.

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5.3.21.1 Object Type Body Editor

Object Type Body Editor allows you to edit properties of the object type bodies. **Object Type Body Editor** can be opened automatically after the object type body is created and is available on editing the object type body (see Create Object Type Body and Edit Object Type Body for details).

To open a object type body in the **Object Type Body Editor**, just double-click it in the explorer tree.

- Using navigation bar
- Editing Object Type Body definition
- Editing object description

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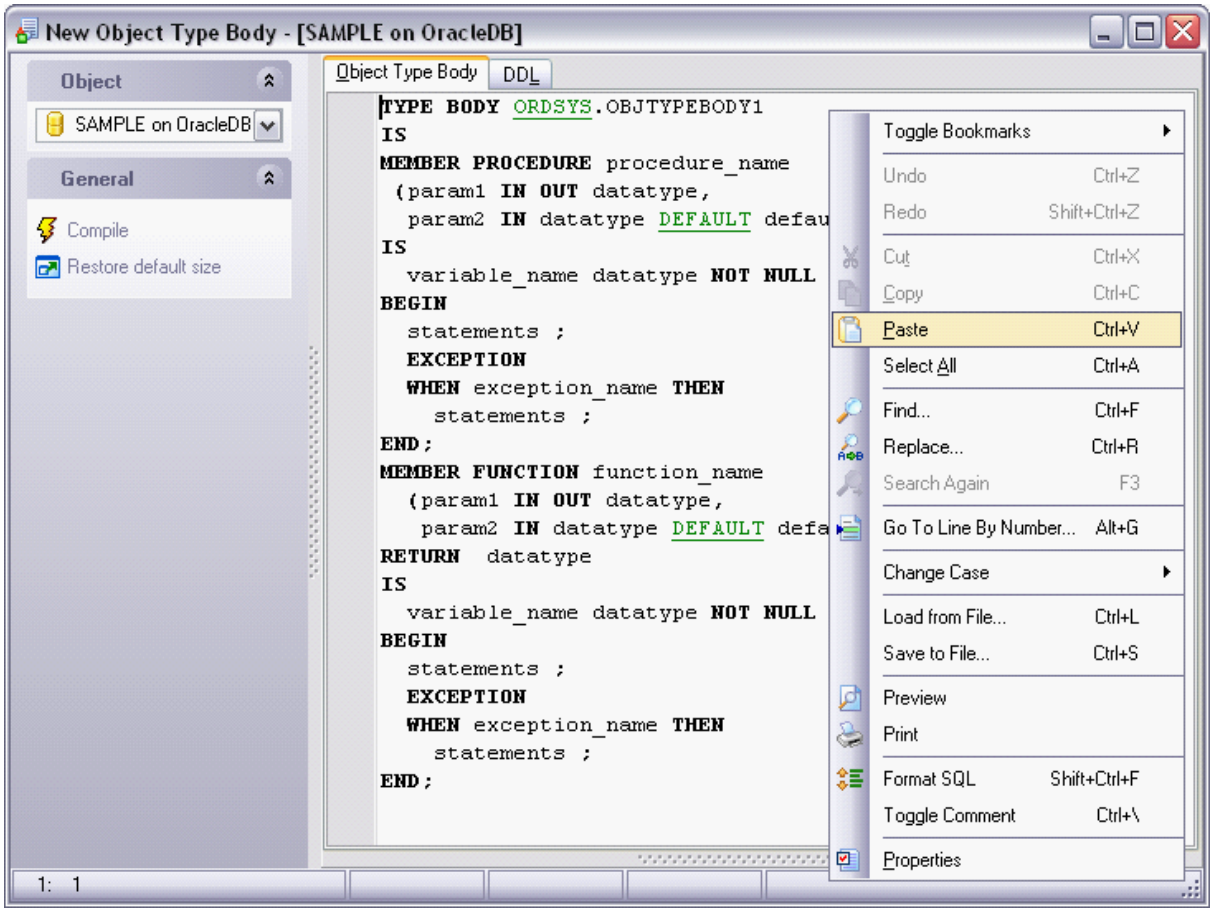
- Viewing DDL definition
- Browsing object dependencies



5.3.21.1.1 Using navigation bar

The navigation bar on the left allows you to:

Object bar:
- Select a database and a object type body for editing within the current window.

General bar:
- Compile the current object type body definition
- Print metadata of the current operator
- View Dependency Tree for the object type body
- Refresh the content of the active tab

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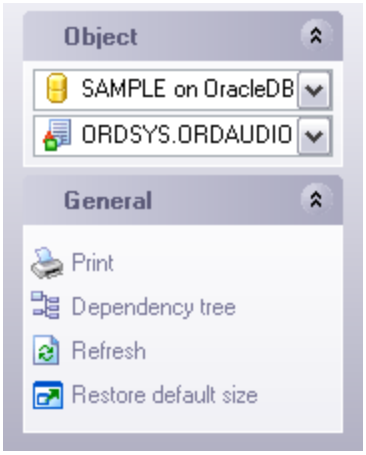
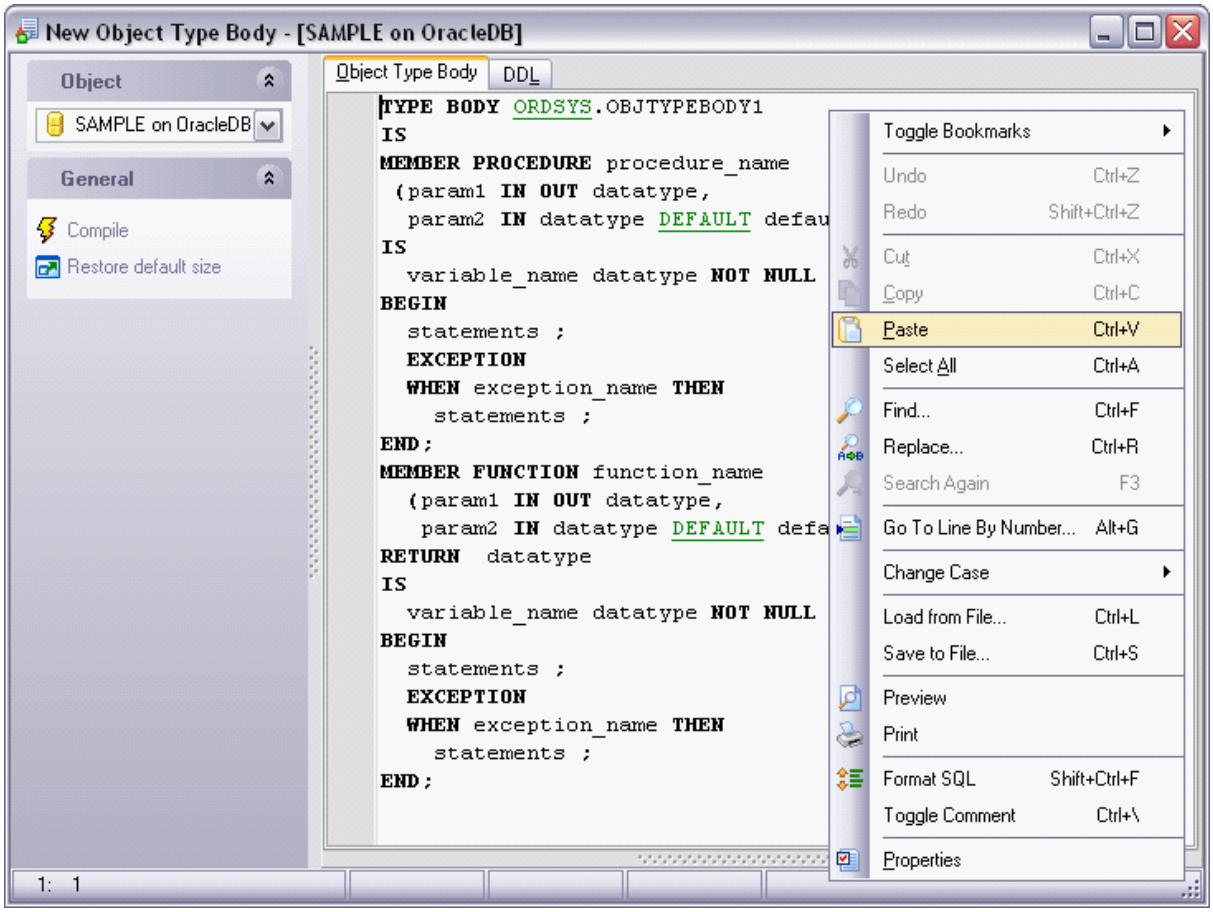


5.3.21.1.2 Editing Object Type Body definition

Use the Object Type Editor window to create a user-defined object type body. The object type body defines the name of the object type, its attributes, methods, and other properties. The object type body contains the code for the methods that implement the type. For each method specified in an object type specification for which you did not specify the call specification, you must specify a corresponding method body in the object type body.



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5.3.22 Array Types

Use the Array Type Editor to create the specification of a named varying array (varray) or a nested table type.

Create array type

To create a new array type:

- Select the **Database | New Object** menu item.
- Select **Array Type** in the New Object window.
- Edit array type properties and fields on the appropriate tabs of the Array Type Editor.

Hint: To create new array type you can also right-click the **Array Types** node of the explorer tree and select the **New Array Type...** item from the popup menu.

To create a new array type with the same properties as one of the existing tables has:

- Select the **Database | Duplicate Object** menu item.
- Follow the instructions of the Duplicate Object Wizard.

The Duplicate Object window allows you to select the database to create the new array type in and to edit the result SQL statement for creating the array type.

Edit array type

To edit the existing array type:

- Select the array type for editing in the explorer tree (type the first letters of the array type name for quick search).
- Right-click and select the **Edit Array Type <Array Type_Name>** item in the popup menu or simply double-click the array type.
- Edit array type subobjects and data on the appropriate tabs of the Array Type Editor.

Drop array type

To drop a array type:

- Select the array type for editing in the explorer tree.
- Right-click and select the **Drop Array Type <Array Type_Name>** item from the popup menu.
- Confirm dropping in the dialog window.

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5.3.22.1 Array Type Editor

Array Type Editor allows you to edit properties of the array types. **Array Type Editor** can be open automatically after the array type is created and is available on editing the array type (see Create Array Type and Edit Array Type for details).

To open a array type in the **Array Type Editor**, just double-click it in the Explorer Tree.

- Using navigation bar
- Editing array type definition
- Editing object description
- Viewing DDL definition
- Browsing object dependencies

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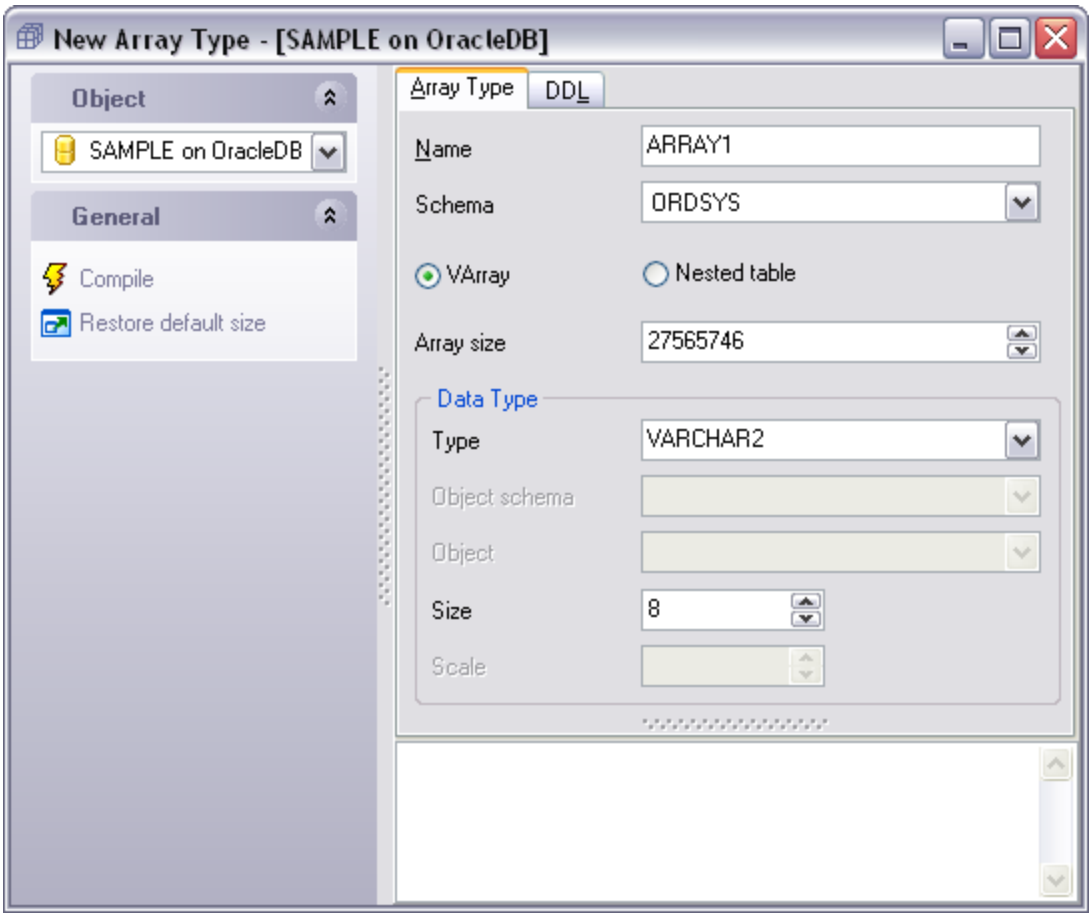

5.3.22.1.1 Using navigation bar

The navigation bar on the left allows you to:

Object bar:
- Select a database and a array type for editing within the current window.

General bar:
- Compile the current array type definition
- Print metadata of the current operator
- View Dependency Tree for the array type
- Refresh the content of the active tab

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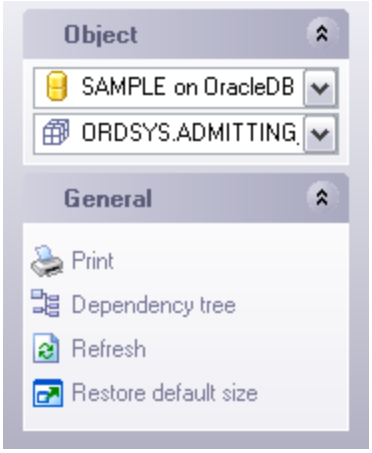

5.3.22.1.2 Editing Array Type definition

Name
Is the name of the new array type or a nested table type..

Schema
Specifies the schema in which the array type or a nested table type is created.

VArray
lets you create the type as an ordered set of elements, each of which has the same datatype. You must specify a name and a maximum limit of one or more. The array limit must be an integer literal.

Specify array size below at the corresponding box.

Nested table
lets you create a named nested table.

Data type
If data type is an object type, then the nested table type describes a table whose columns match the name and attributes of the object type. If defined data type is a scalar type, then the nested table type describes a table with a single, scalar type column called COLUMN_VALUE.

The type name for the objects contained in the varray must be one of the following:
- A built-in datatype
- A REF
- An object type

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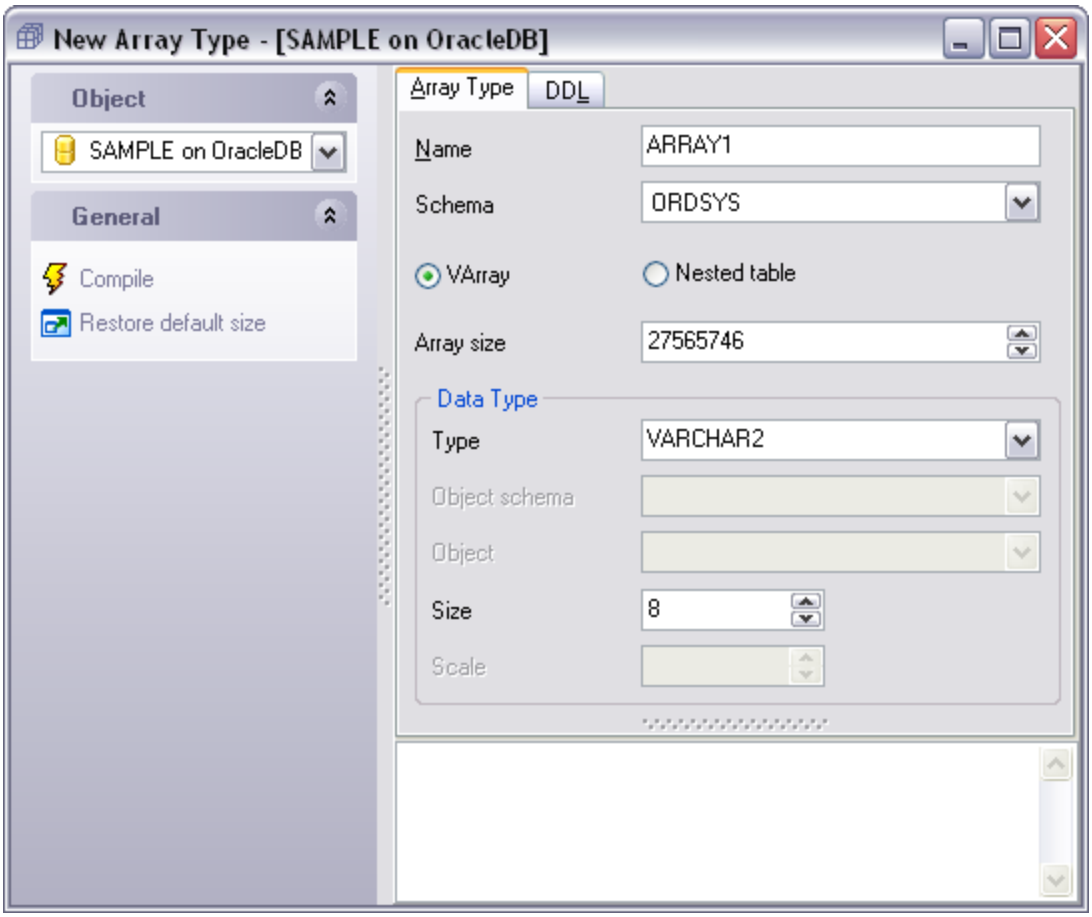

5.3.23 Libraries

Library is a schema object associated with an operating-system shared library.

Create library

To create a new library:

- Select the **Database | New Object** menu item.
- Select **Library** in the New Object window.
- Edit library properties and fields on the appropriate tabs of the Library Editor.

Hint: To create new library you can also right-click the **Libraries** node of the explorer tree and select the **New Library...** item from the popup menu.

To create a new library with the same properties as one of the existing tables has:

- Select the **Database | Duplicate Object** menu item.
- Follow the instructions of the Duplicate Object Wizard.

The Duplicate Object window allows you to select the database to create the new library in and to edit the result SQL statement for creating the library.

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Edit library

To edit the existing library:

- Select the library for editing in the explorer tree (type the first letters of the library name for quick search).
- Right-click and select the **Edit Library <Library_Name>** item in the popup menu or simply double-click the library.
- Edit library subobjects and data on the appropriate tabs of the Library Editor.

Drop library

To drop a library:

- Select the library for editing in the explorer tree.
- Right-click and select the **Drop Library <Library_Name>** item from the popup menu.
- Confirm dropping in the dialog window.

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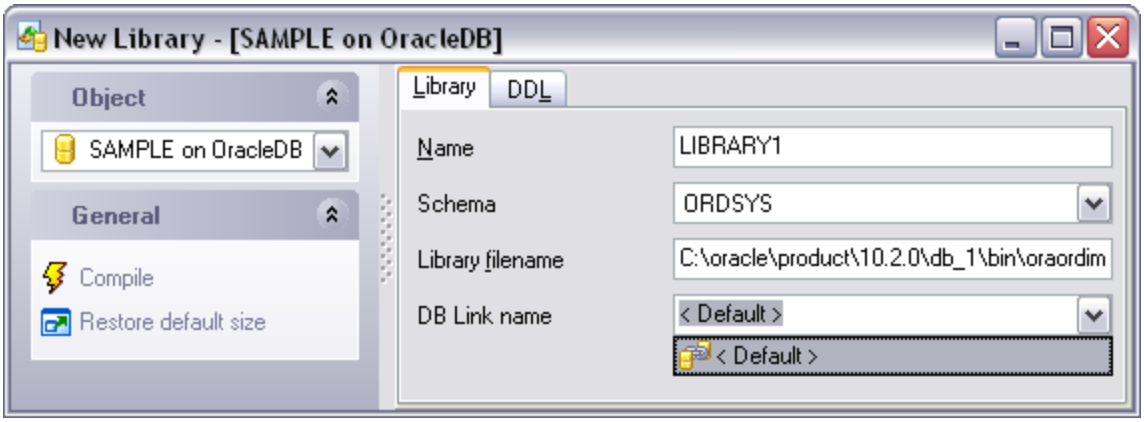
5.3.23.1 Library Editor

Library Editor allows you to edit properties of the librarys. **Library Editor** can be open automatically after the library is created and is available on editing the library (see Create Library and Edit Library for details).

To open a library in the **Library Editor**, just double-click it in the Explorer Tree.

- Using navigation bar
- Editing library definition
- Editing object description
- Viewing DDL definition
- Browsing object dependencies



5.3.23.1.1 Using navigation bar

The navigation bar on the left allows you to:

Object bar:
- Select a database and a library for editing within the current window.

General bar:
- Compile the current library definition
- Print metadata of the current library
- View Dependency Tree for the library
- Refresh the content of the active tab

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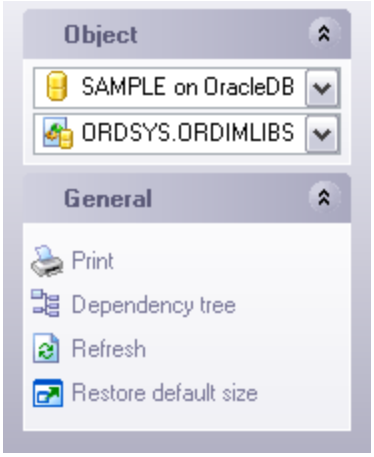


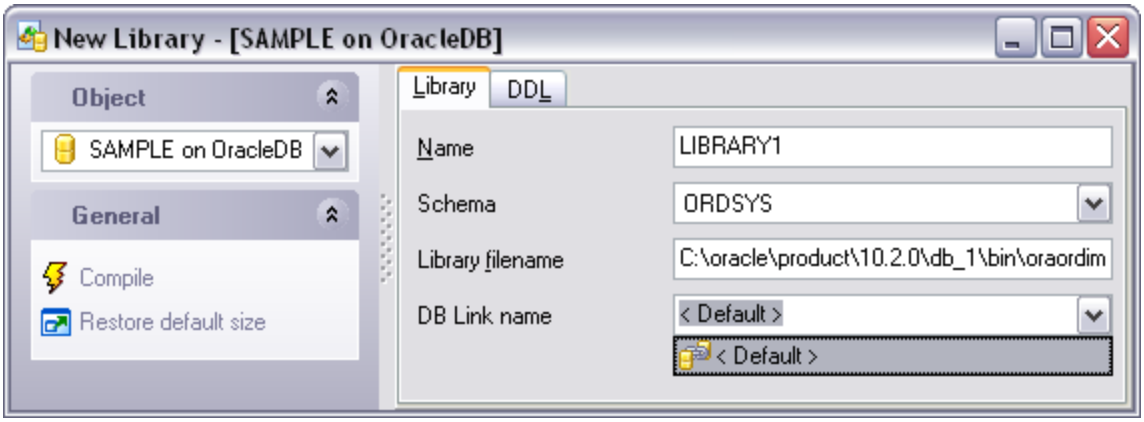
5.3.23.1.2 Editing Library definition

Name
Specify the name that will represent this library when a user declares a function or procedure with a call_spec.

Schema
Specifies the schema in which the array type or a nested table type is created.

Library filename
Specify a string literal, enclosed in single quotation marks. This string should be the path or filename your operating system recognizes as naming the shared library.

DB Link name
Specify a certain DB link if you want external procedures to be run from a database link other than the server.



5.3.24 Java Sources

Use Java Source Editor to create a schema object containing a Java source.

Create Java source

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To create a new Java source:

- Select the **Database | New Object...** menu item.
- Select **Java Source** in the New Object dialog.
- Edit Java source definition within the Java Source Editor.

Hint: To create new Java source you can also right-click the **Java Sources** node of the explorer tree and select the **New Java Source...** item from the popup menu.

To create a new Java source with the same properties as one of the existing Java sources has:

- Select the **Database | Duplicate Object...** menu item.
- Follow the instructions of the Duplicate Object Wizard.

Edit Java source

To edit the existing Java source:

- Select the Java source for editing in the explorer tree (type the first letters of the Java source name for quick search).
- Right-click and select the **Edit Java Source <Java Source_Name>** item from the popup menu or simply double-click the Java source.
- Edit Java source definition and data on the appropriate tabs of the Java Source Editor.

Drop Java source

To drop a Java source:

- Select the Java source to drop in the explorer tree.
- Right-click and select the **Drop Java Source <Java Source_Name>** item from the popup menu.
- Confirm dropping in the dialog window.

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5.3.24.1 Java Source Editor

The **Java Source Editor** allows you to define Java source properties. It opens when you create a new sequence or edit the existing one (see Create Java Source and Edit Java Source for details).

To open a view in the **Java Source Editor**, double-click it in the explorer tree.

- Using navigation bar
- Editing Java source definition
- Editing object description
- Viewing DDL definition
- Browsing object dependencies

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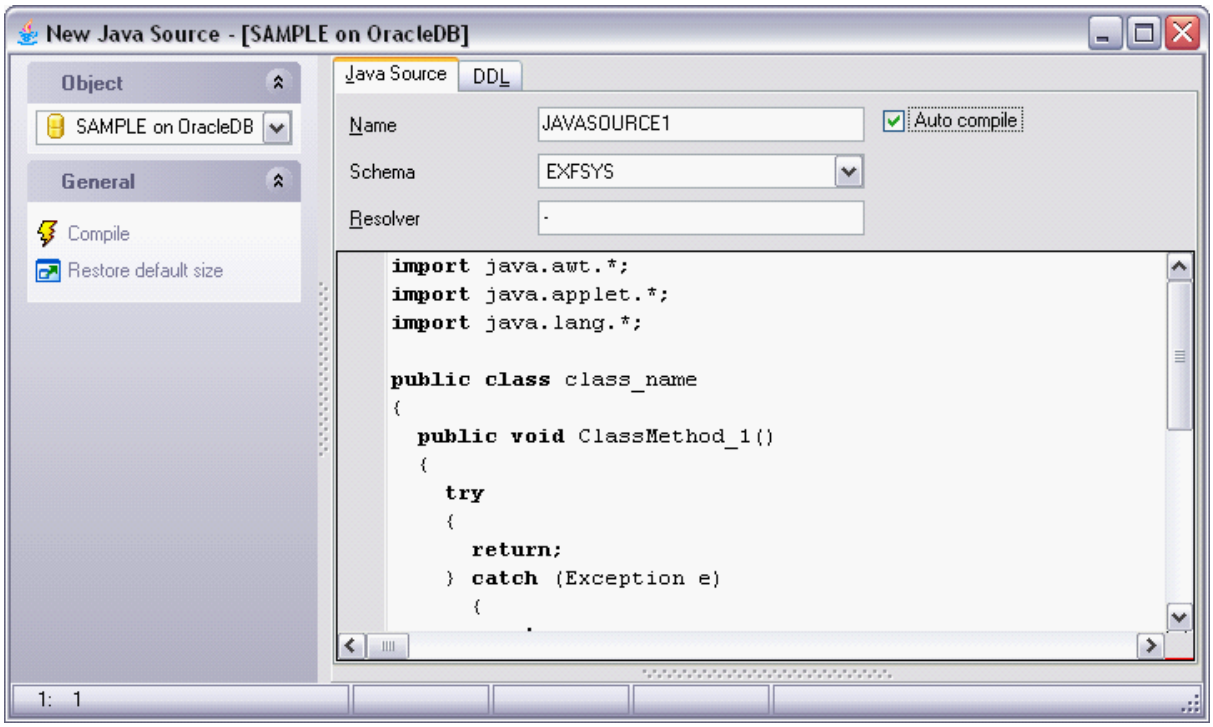

5.3.24.1.1 Using navigation bar

The navigation bar on the left allows you to:

Object bar:
- Select a database and a Java source for editing within the current window.

General bar:
- Compile the current Java source definition
- Print metadata of the current Java source
- View Dependency Tree for the Java source
- Refresh the content of the active tab
- Bring the window to its default size

The next bar displays various actions according to the current page of **Java Source Editor**.

5.3.24.1.2 Editing Java Source definition

Name
This field specifies the name of the schema object in which the source code is held.

Schema
The **Schema** field specifies the schema in which the object containing the Java file will reside.

Auto compile

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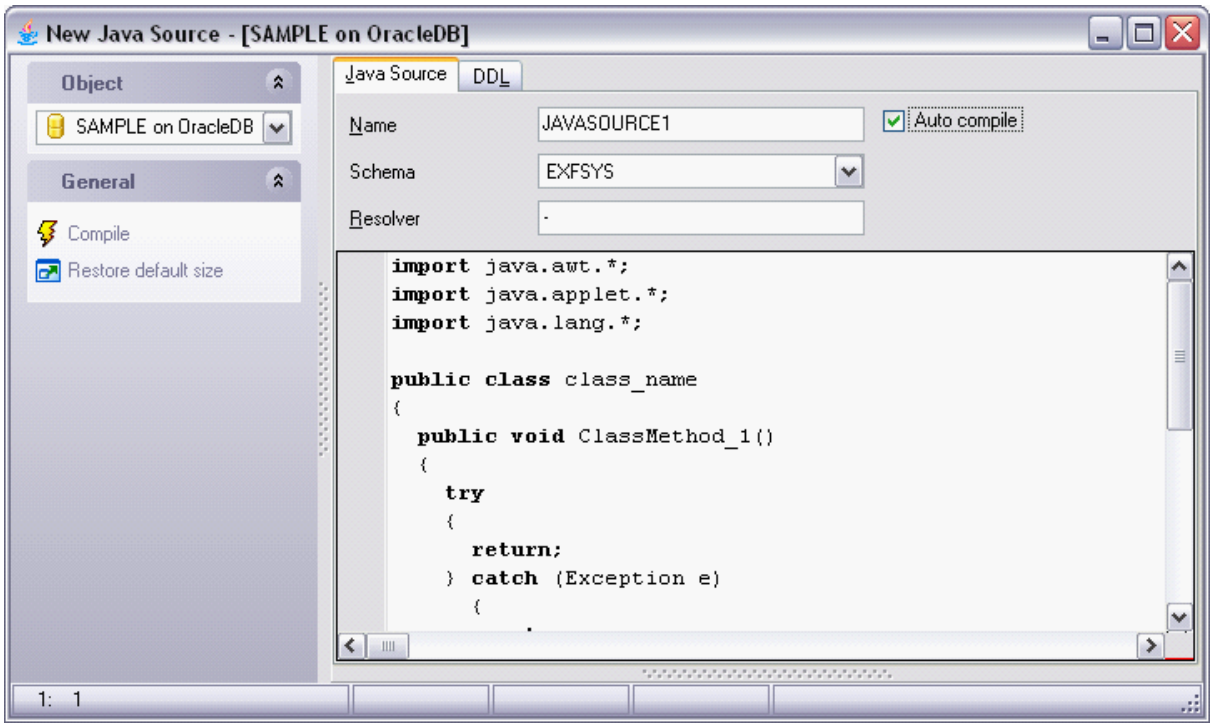
The option defines whether Java source compilation should occur automatically.

The **Resolver** field lets you specify a mapping of the fully qualified Java name to a Java schema object, where:

- match_string is either a fully qualified Java name, a wildcard that can match such a Java name, or a wildcard that can match any name.
- schema_name designates a schema to be searched for the corresponding Java schema object.
- A dash (-) as an alternative to schema_name indicates that if match_string matches a valid Java name, Oracle can leave the name unresolved. The resolution succeeds, but the name cannot be used at run time by the class.



5.3.25 Java Classes

Use Java Class Editor to create a schema object containing a Java class.

Create Java class

To create a new Java class:

- Select the **Database | New Object...** menu item.
- Select **Java Class** in the New Object dialog.
- Edit Java class definition within the Java Class Editor.

Hint: To create new Java class you can also right-click the **Java Classes** node of the explorer tree and select the **New Java Class...** item from the popup menu.

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To create a new Java class with the same properties as one of the existing Java classes has:

- Select the **Database | Duplicate Object...** menu item.
- Follow the instructions of the Duplicate Object Wizard.

Edit Java class

To edit the existing Java class:

- Select the Java class for editing in the explorer tree (type the first letters of the Java class name for quick search).
- Right-click and select the **Edit Java Class <Java Class_Name>** item from the popup menu or simply double-click the Java class.
- Edit Java class definition and data on the appropriate tabs of the Java Class Editor.

Drop Java class

To drop a Java class:

- Select the Java class to drop in the explorer tree.
- Right-click and select the **Drop Java Class <Java Class_Name>** item from the popup menu.
- Confirm dropping in the dialog window.

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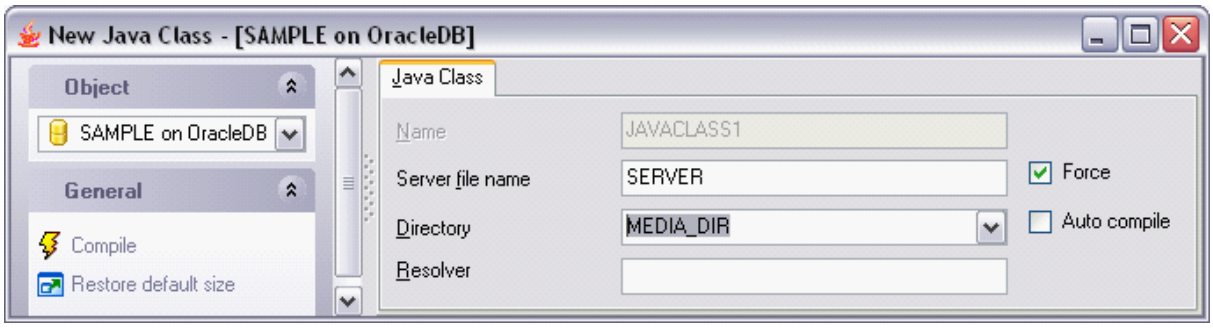
5.3.25.1 Java Class Editor

The **Java Class Editor** allows you to define Java class properties. It opens when you create a new sequence or edit the existing one (see Create Java Class and Edit Java Class for details).

To open a view in the **Java Class Editor**, double-click it in the explorer tree.

- Using navigation bar
- Editing Java class definition
- Editing object description
- Viewing DDL definition
- Browsing object dependencies



5.3.25.1.1 Using navigation bar

The navigation bar on the left allows you to:

Object bar:
- Select a database and a Java class for editing within the current window.

General bar:
- Compile the current Java class definition
- Print metadata of the current Java class
- View Dependency Tree for the Java class
- Refresh the content of the active tab

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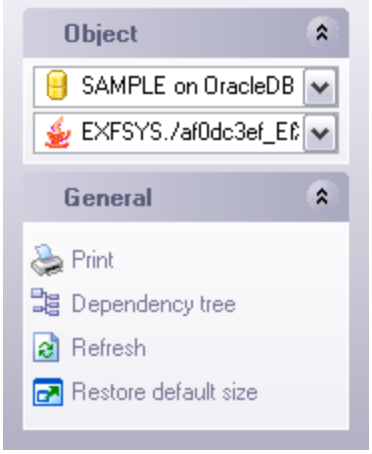
- Bring the window to its default size

The next bar displays various actions according to the current page of **Java Class Editor** .



5.3.25.1.2 Editing Java Class definition

Server filename/Directory
Specify the directory and filename of a previously created file on the operating system and server file containing the sequence.

Force
Uncheck the option to roll back the results of this CREATE command if you have specified either RESOLVE or COMPILE and the resolution or compilation fails. If you do not specify this option, then Oracle takes no action if the resolution or compilation fails. That is, the created schema object remains.

Auto compile
The option defines whether Java class compilation should occur automatically.

The **Resolver** field lets you specify a mapping of the fully qualified Java name to a Java schema object, where:

- match_string is either a fully qualified Java name, a wildcard that can match such a Java name, or a wildcard that can match any name.
- schema_name designates a schema to be searched for the corresponding Java schema object.
- A dash (-) as an alternative to schema_name indicates that if match_string matches a valid Java name, Oracle can leave the name unresolved. The resolution succeeds, but the name cannot be used at run time by the class.

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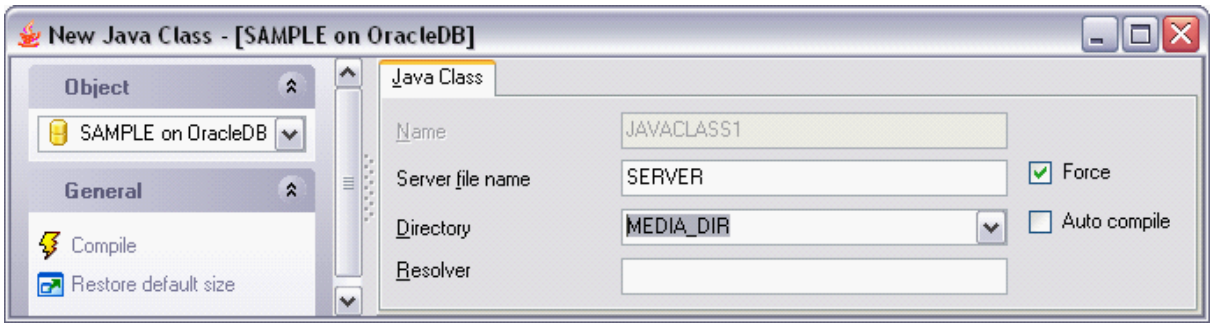

5.3.26 Java Resources

Use the Java Resource Editor to create a schema object containing a Java resource.

Creating Java Resource

To create a new Java resource:

- Select the **Database | New Object...** menu item.
- Select **Java Resource** in the New Object dialog.
- Edit Java resource within the Java Resource Editor.

> **Hint**: To create new Java resource you can also right-click the **Java Resources** node of the explorer tree and select **New Java Resource...** item from the popup menu.

To create a new Java resource with the same properties as one of the existing Java resources has:

- Select the **Database | Duplicate Object...** menu item.
- Follow the instructions of the Duplicate Object Wizard.

Editing Java Resource

To edit an existing Java resource:

- Select the Java resource for editing in the explorer tree (type the first letters of the Java resource name for quick search)
- Right-click and select the **Edit Java Resource** item from the popup menu or simply double-click the Java resource.
- Edit Java resource definition in the editor area of the Java Resource Editor.

Dropping Java Resource

To drop a Java Resource:

- Select the Java resource to drop in the explorer tree.
- Right-click and select the **Drop Java Resource** item from the popup menu.
- Confirm dropping in the dialog window.

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5.3.26.1 Java Resource Editor

The **Java Resource Editor** allows you to create new Java resource, execute the existing Java resource or edit its definition. It opens when you create a new Java resource or edit the existing one (see Create Java Resource and Edit Java Resource for details).

- Using navigation bar
- Editing Java resource definition
- ting object description
- Viewing DDL definition

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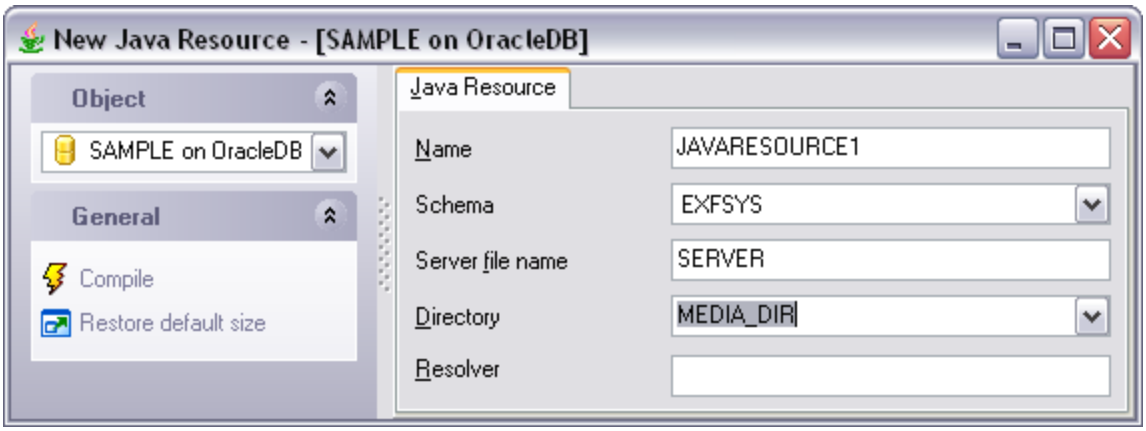
- Browsing object dependencies



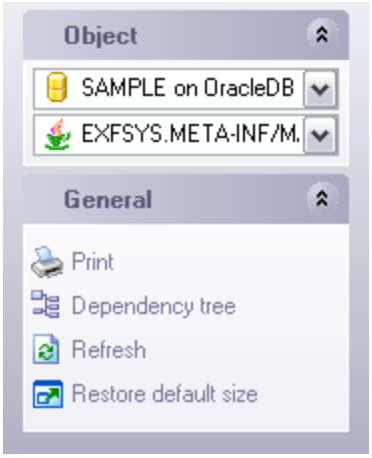
5.3.26.1.1 Using navigation bar

The navigation bar on the left allows you to:

Object bar:
Select a database and a Java resource for editing within the current window.

General bar:
- Compile the current Java resource definition
- Print metadata of the current Java resource
- View Dependency Tree for the Java resource
- Refresh the content of the active tab
- Bring the window to its default size.

The next bar displays various actions according to the current page of **Java Resource Editor**.



5.3.26.1.2 Editing Java Resource definition

Name
This field specifies specifies the name of the schema object to hold the Java resource.

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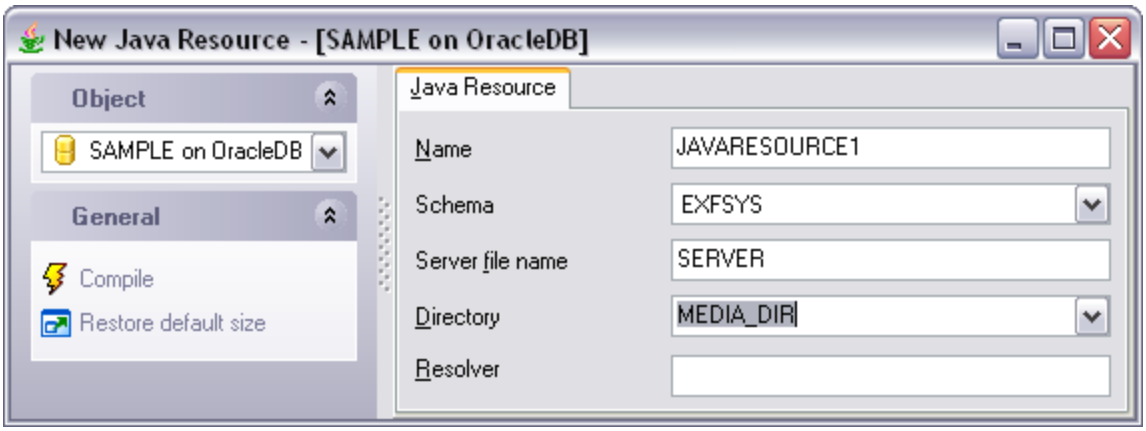
Schema
The **Schema** field specifies the schema in which the object containing the Java file will reside.

Server filename/Directory
Specify the directory and filename of a previously created file on the operating system and server file containing the sequence.

The **Resolver** field lets you specify a mapping of the fully qualified Java name to a Java schema object, where:

- match_string is either a fully qualified Java name, a wildcard that can match such a Java name, or a wildcard that can match any name.
- schema_name designates a schema to be searched for the corresponding Java schema object.
- A dash (-) as an alternative to schema_name indicates that if match_string matches a valid Java name, Oracle can leave the name unresolved. The resolution succeeds, but the name cannot be used at run time by the class.



5.3.27 Index Types

Indextype is an object that specifies the routines that manage a domain (application-specific) index. Indextypes reside in the same namespace as tables, views, and other schema objects. The indextype name is bound to an implementation type, which in turn specifies and refers to user-defined index functions and procedures that implement the indextype.

Create index type

To create a new index type:

- Select the **Database | New Object** menu item.
- Select **Index Type** in the New Object window.
- Edit index type properties and fields on the appropriate tabs of the Index Type Editor.

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Hint: To create new index type you can also right-click the **Index Types** node of the explorer tree and select the **New Index Type...** item from the popup menu.

To create a new index type with the same properties as one of the existing tables has:

- Select the **Database | Duplicate Object** menu item.
- Follow the instructions of the Duplicate Object Wizard.

The Duplicate Object window allows you to select the database to create the new index type in and to edit the result SQL statement for creating the index type.

Edit index type

To edit the existing index type:

- Select the index type for editing in the explorer tree (type the first letters of the index type name for quick search).
- Right-click and select the **Edit Index Type <Index Type_Name>** item in the popup menu or simply double-click the index type.
- Edit index type subobjects and data on the appropriate tabs of the Index Type Editor.

Drop index type

To drop a index type:

- Select the index type for editing in the explorer tree.
- Right-click and select the **Drop Index Type <Index Type_Name>** item from the popup menu.
- Confirm dropping in the dialog window.

5.3.27.1 Index Type Editor

Index Type Editor allows you to edit properties of the index types. **Index Type Editor** can be open automatically after the index type is created and is used when editing the index type (see Create Index Type and Edit Index Type for details).

To open a index type in the **Index Type Editor**, just double-click it in the Explorer Tree.

- Using navigation bar
- Editing index type definition
- Editing object description
- Viewing DDL definition
- Browsing object dependencies

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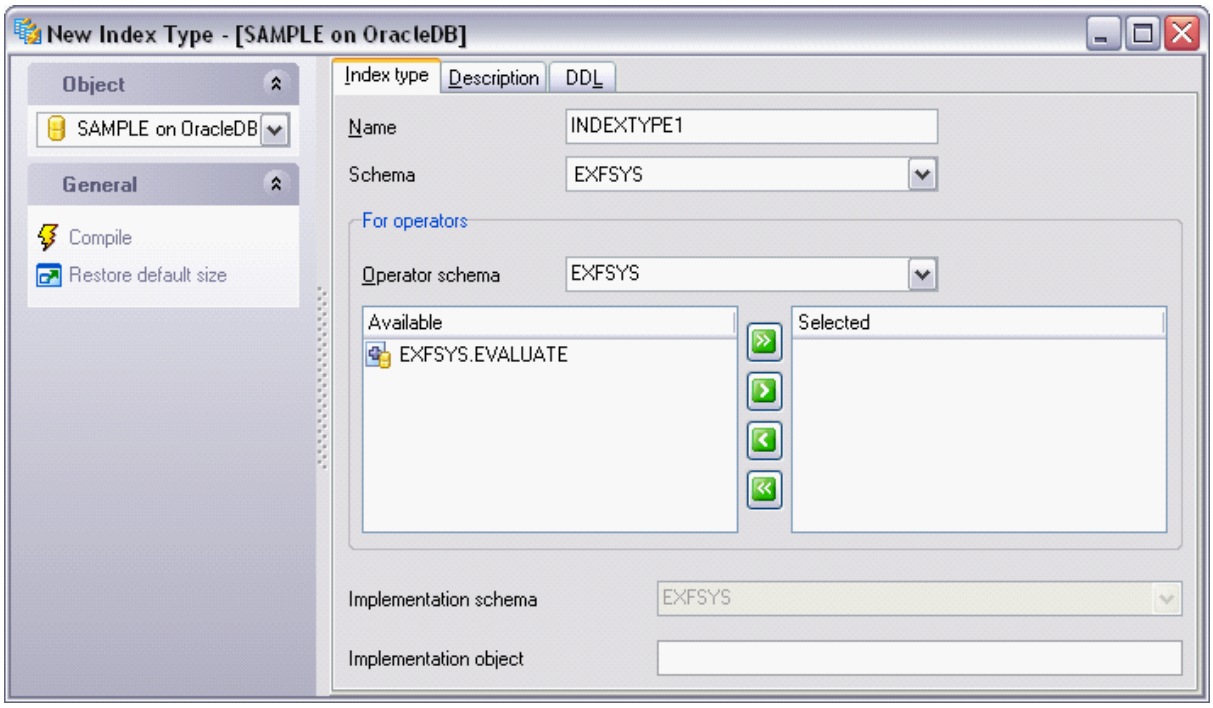
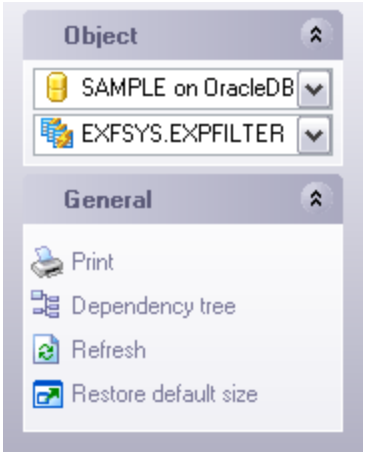


5.3.27.1.1 Using navigation bar

The navigation bar on the left allows you to:

Object bar:
- Select a database and a index type for editing within the current window.

General bar:
- Compile the current index type definition
- Print metadata of the current operator
- View Dependency Tree for the index type
- Refresh the content of the active tab



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5.3.27.1.2 Editing Index Type definition

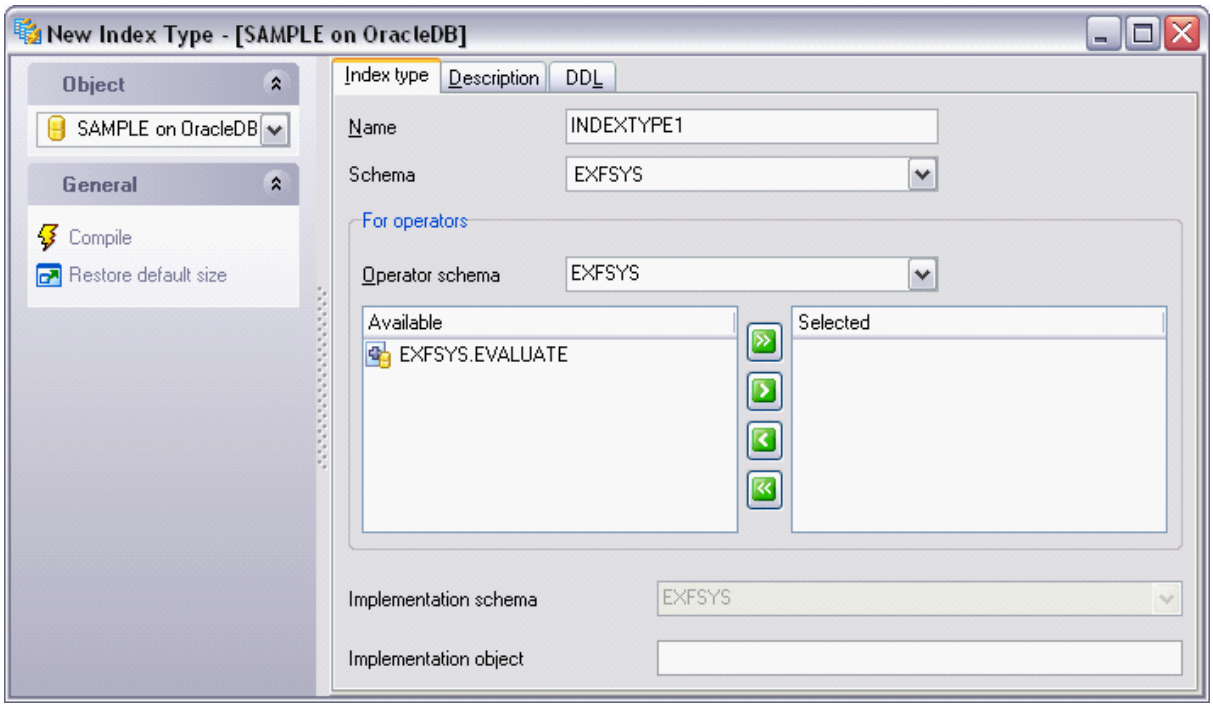
Name
Specify the name of the indextype to be created.

Schema
Specify the name of the schema in which the indextype resides.

For operator
Choose the proper schema and specify the list of operators supported by the indextype.

To include operators to the list, move them from the **Available** list to the **Selected** by double-clicking or dragging their names. To remove the operators from the list, move them back in the same way. You can also use the arrow buttons to move the selected operators (multiple selection can be performed using Ctrl or Shift).

Define the name of the implementation object at the corresponding field to bind the indextype to an implementation type, which specifies and refers to user-defined index functions and procedures that implement the indextype.



5.3.28 Operators

Use the Operator Editor to create a new operator and define its bindings. Operators can be referenced by indextypes and by SQL queries and DML statements.The operators, in turn, reference functions, packages, types, and other user-defined objects.

Create operator

To create a new operator:

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- Select the **Database | New Object** menu item.
- Select **Operator** in the New Object window.
- Edit operator properties and fields on the appropriate tabs of the Operator Editor.

Hint: To create new operator you can also right-click the **Operators** node of the explorer tree and select the **New Operator...** item from the popup menu.

To create a new operator with the same properties as one of the existing tables has:

- Select the **Database | Duplicate Object** menu item.
- Follow the instructions of the Duplicate Object Wizard.

The Duplicate Object window allows you to select the database to create the new operator in and to edit the result SQL statement for creating the operator.

Edit operator

To edit the existing operator:

- Select the operator for editing in the explorer tree (type the first letters of the operator name for quick search).
- Right-click and select the **Edit Operator <Operator_Name>** item in the popup menu or simply double-click the operator.
- Edit operator subobjects and data on the appropriate tabs of the Operator Editor.

Drop operator

To drop a operator:

- Select the operator for editing in the explorer tree.
- Right-click and select the **Drop Operator <Operator_Name>** item from the popup menu.
- Confirm dropping in the dialog window.

5.3.28.1 Operator Editor

Operator Editor allows you to edit properties of the operators. **Operator Editor** can be open automatically after the operator is created and is available on editing the operator (see Create Operator and Edit Operator for details).

To open a operator in the **Operator Editor**, just double-click it in the Explorer Tree.

- Using navigation bar
- Editing operator definition
- Editing object description
- Viewing DDL definition
- Browsing object dependencies

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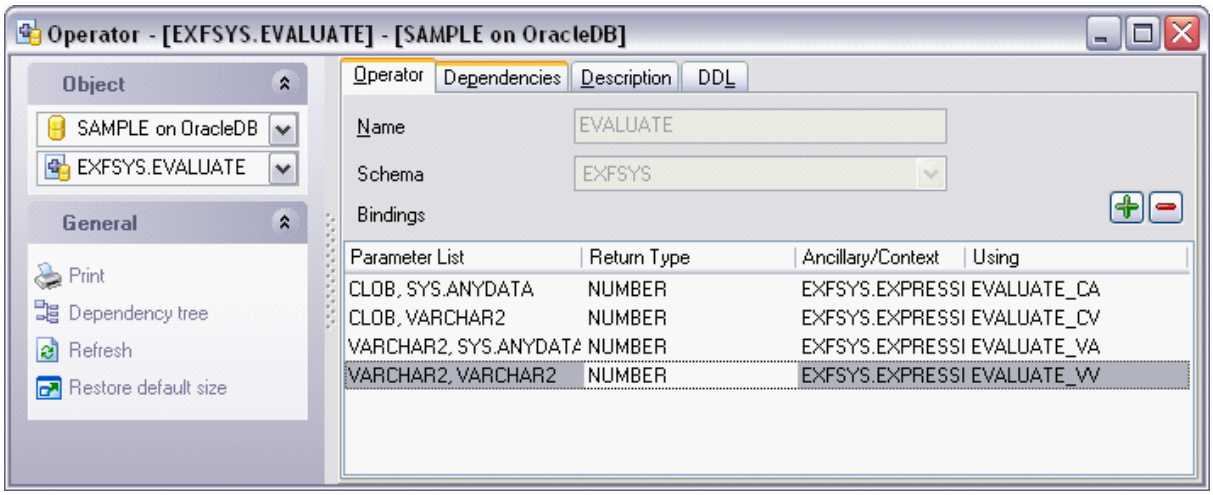
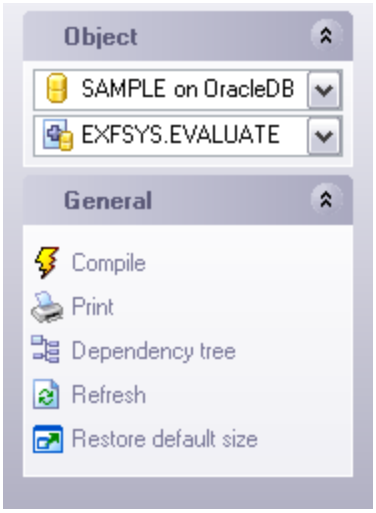


5.3.28.1.1 Using navigation bar

The navigation bar on the left allows you to:

Object bar:
- Select a database and a operator for editing within the current window.

General bar:
- Compile the current operator definition
- Print metadata of the current operator
- View Dependency Tree for the operator
- Refresh the content of the active tab
- Bring the window to its default size



5.3.28.1.2 Editing Operator definition

Name
Specify the name of the operator to be created.

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Schema
Specify the schema containing the operator.

Bindings
Use + (plus sign) and - (minus sign) buttons to add or remove parameter datatypes for binding the operator to a function.

Editing Operator binding
The signature of each binding - that is, the sequence of the datatypes of the arguments to the corresponding function - must be unique according to the rules of overloading.The parameter_type can itself be an object type. If it is, then you can optionally qualify it with its schema.

Object types schema name
Specify the name of the schema in which the operator resides.

To include types to the list, move them from the **Available** list to the **Selected** by double-clicking or dragging their names. To remove the types from the list, move them back in the same way. You can also use the arrow buttons to move the selected types (multiple selection can be performed using Ctrl or Shift).

Return type
Specify the return datatype for the binding.The return type can itself be an object type. If so, then you can optionally qualify it with its schema in the **Implementation object schema** and **Implementation object name** fields.

Implementation type
Use this group clause to describe the implementation of the binding.

Ancillary
Use this type to indicate that the operator binding is ancillary to the specified primary operator binding. In this case please fill the **Ancillary operator schema** and **Ancillary operator** fields.

Context
Use this type to indicate to describe the functional implementation of a binding that is not ancillary to a primary operator binding. In this case please fill the **Scan context schema** and **Scan context** fields.

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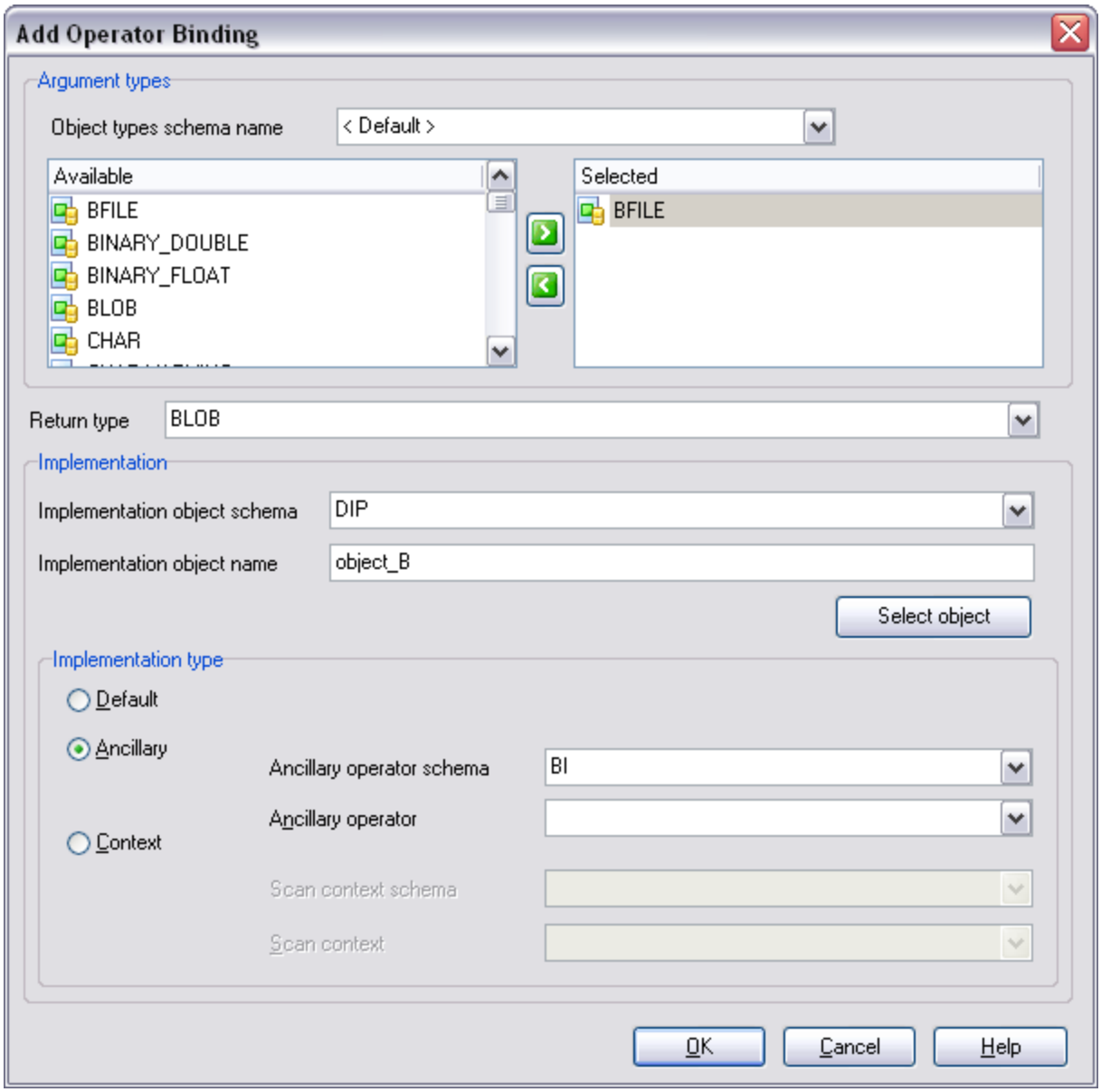

5.3.29 Dimensions

A **dimension** defines a parent-child relationship between pairs of column sets, where all the columns of a column set must come from the same table. However, columns in one column set (called a level) can come from a different table than columns in another set. The optimizer uses these relationships with materialized views to perform query rewrite.

Create dimension

To create a new dimension:

- Select the **Database | New Object** menu item.
- Select **Dimension** in the New Object window.
- Edit dimension properties and fields on the appropriate tabs of the Dimension Editor.

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Hint: To create new dimension you can also right-click the **Dimensions** node of the explorer tree and select the **New Dimension...** item from the popup menu.

To create a new dimension with the same properties as one of the existing tables has:

- Select the **Database | Duplicate Object** menu item.
- Follow the instructions of the Duplicate Object Wizard.

The Duplicate Object window allows you to select the database to create the new dimension in and to edit the result SQL statement for creating the dimension.

Edit dimension

To edit the existing dimension:

- Select the dimension for editing in the explorer tree (type the first letters of the dimension name for quick search).
- Right-click and select the **Edit Dimension <Dimension_Name>** item in the popup menu or simply double-click the dimension.
- Edit dimension subobjects and data on the appropriate tabs of the Dimension Editor.

Drop dimension

To drop a dimension:

- Select the dimension for editing in the explorer tree.
- Right-click and select the **Drop Dimension <Dimension_Name>** item from the popup menu.
- Confirm dropping in the dialog window.

5.3.29.1 Dimension Editor

Dimension Editor allows you to edit properties of the dimensions. **Dimension Editor** can be open automatically after the dimension is created and is used when editing the dimension (see Create Dimension and Edit Dimension for details).

To open a dimension in the **Dimension Editor**, just double-click it in the Explorer Tree.

- Using navigation bar
- Editing dimension definition
- Editing object description
- Viewing DDL definition
- Browsing object dependencies

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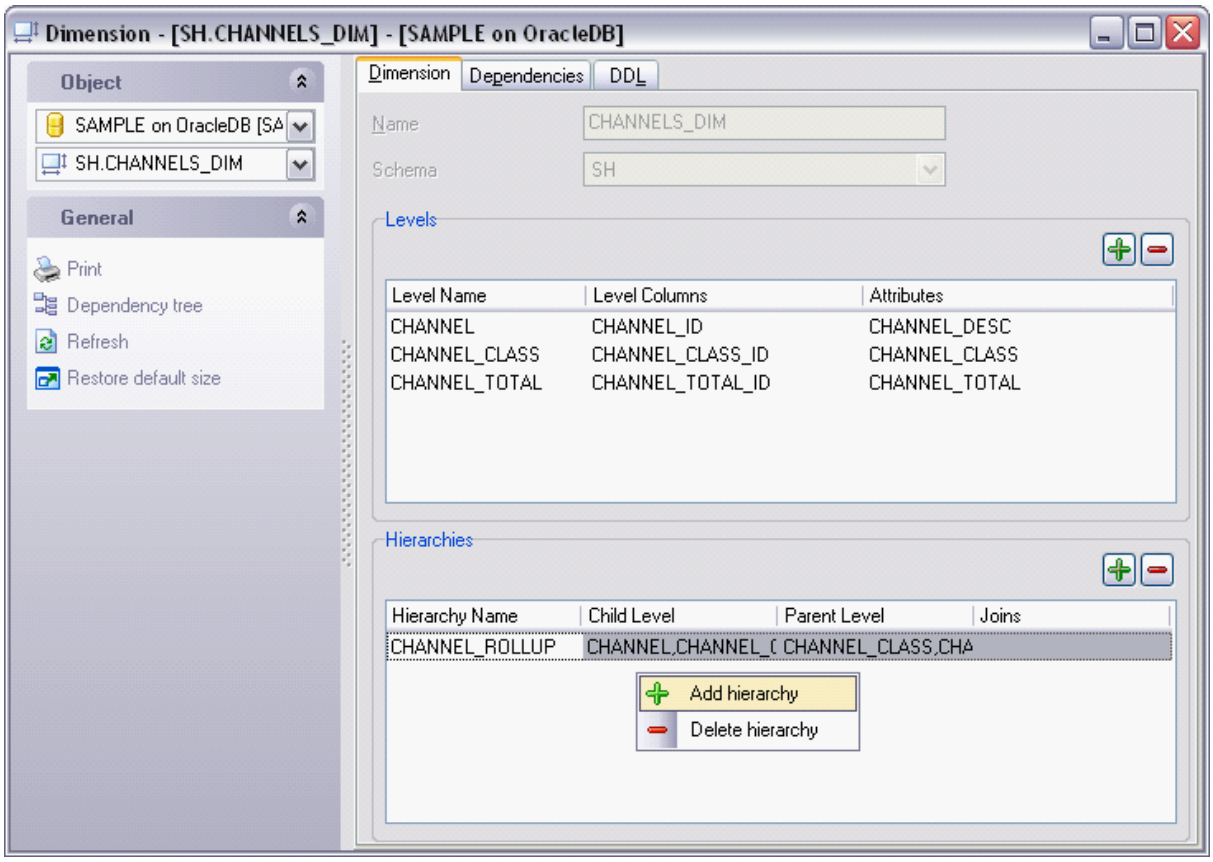
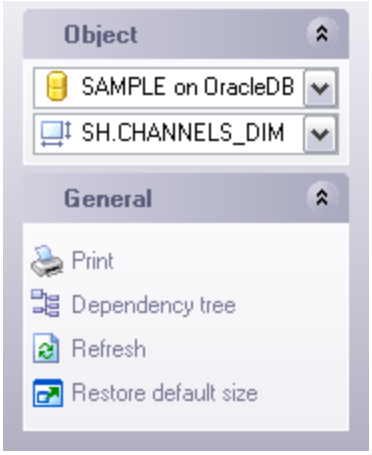


5.3.29.1.1 Using navigation bar

The navigation bar on the left allows you to:

Object bar:
- Select a database and a dimension for editing within the current window.

General bar:
- Compile the current dimension definition
- Print metadata of the current dimension
- View Dependency Tree for the dimension
- Refresh the content of the active tab
- Bring the window to its default size



5.3.29.1.2 Editing Dimension definition

Name
Specify the name of the dimension to be created. The name must be unique within its schema.

Schema
Specify the schema in which the dimension will be created.

Levels
A level defines dimension hierarchies and attributes.
Use + (plus sign) and - (minus sign) buttons to add or remove a dimension level.

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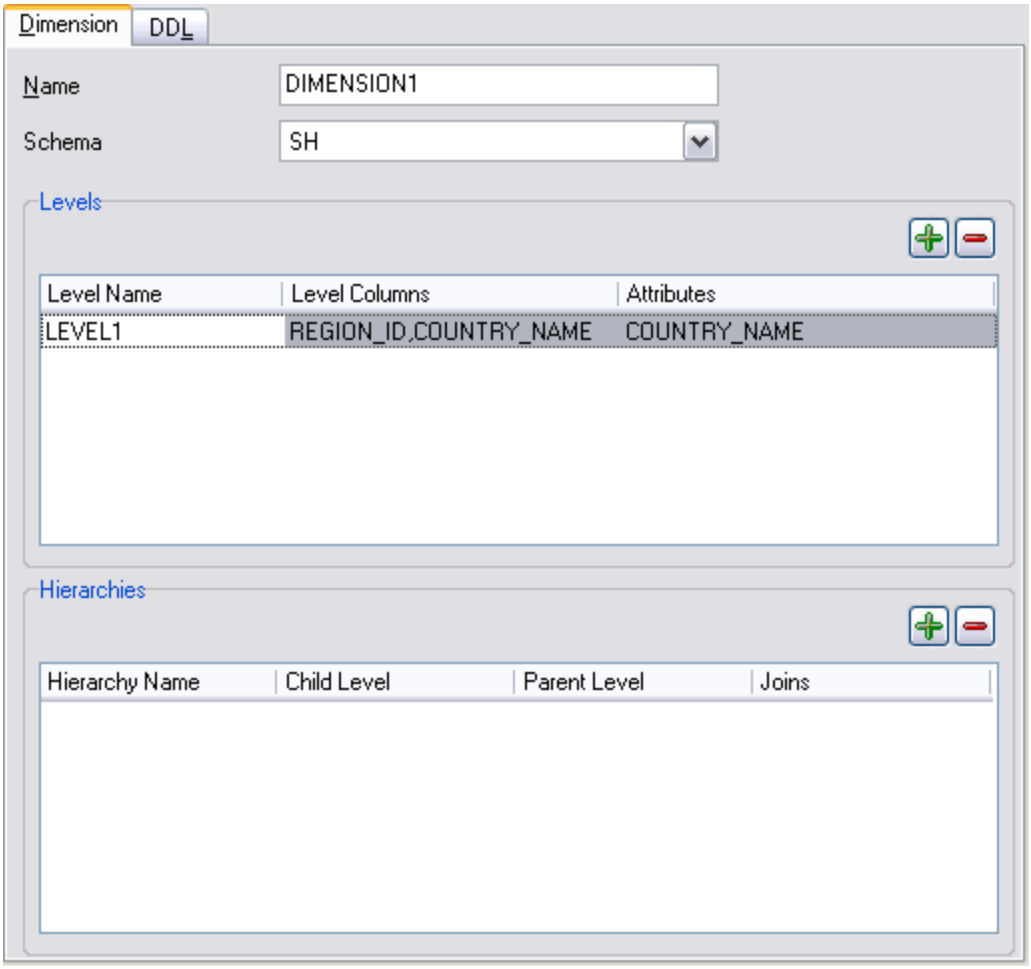

Editing dimension level
Specify the name of the level, schema name and define the columns in the level (the tables you specify in here must already exist).

To include columns to the list, move them from the **Available** list to the **Selected** by double-clicking or dragging their names. To remove the columns from the list, move them back in the same way. You can also use the arrow buttons to move the selected types (multiple selection can be performed using Ctrl or Shift).

Attributes
In the corresponding lists you specify the columns that are uniquely determined by a hierarchy level. The columns in level must all come from the same table as the dependent columns.

Editing dimension hierarchy
Here you can define a linear hierarchy of levels in the dimension. Each hierarchy forms a chain of parent-child relationships among the levels in the dimension. Hierarchies in a dimension are independent of each other. They may, but need not, have columns in common. Each level in the dimension should be specified at most once in this clause, and each level must already have been created.

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Hierarchy name
Specify the name of the hierarchy. This name must be unique in the dimension.

Hierarchy levels
Specify the name of a level that has an n:1 relationship with a parent level and press the Add button. To remove the relationship lease select it and press the corresponding button.

Join keys
Here you can specify an inner equijoin relationship for a dimension whose columns are contained in multiple tables. Setting this relationship is required and permitted only when the columns specified in the hierarchy are not all in the same table.

Table schema Table name
Specify the schema and table of each child column,

Level to reference
Specify the name of a level.

Join key columns
Specify one or more columns that are join-compatible with columns in the parent level and press the **Add** button. To remove the column please select it and press the corresponding button.

To include columns to the list, move them from the **Available** list to the **Selected** by double-clicking or dragging their names. To remove the columns from the list, move them back in the same way. You can also use the arrow buttons to move the selected types (multiple selection can be performed using Ctrl or Shift).

Specify the name of a level that has an n:1 relationship with a parent level and press the **Add** button. To remove the relationship lease select it and press the corresponding button.

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5.4 Nonschema objects

Other types of objects are also stored in the database and can be created and manipulated with SQL but are not contained in a schema:

Contexts
Users
Roles
Profiles
Consumer Groups
Resource Plans
Directories
Tablespaces
Rollback Segments
Redo Log Groups

Use DB Explorer tree to navigate between the objects.

See also:
Schema objects

5.4.1 Contexts

Use **Context Editor** to create a namespace for a context (a set of application-defined attributes that validates and secures an application) and associate the namespace with the externally created package that sets the context.

Create context

To create a new context:

- Select the **Database | New Object...** menu item.
- Select **Context** in the New Object dialog.
- Edit context definition within the Context Editor.

> **Hint**: To create new context you can also right-click the **Contexts** node of the explorer tree and select the **New Context...** item from the popup menu.

To create a new context with the same properties as one of the existing contexts has:

- Select the **Database | Duplicate Object...** menu item.
- Follow the instructions of the Duplicate Object Wizard.

Edit context

To edit the existing context:

- Select the context for editing in the explorer tree (type the first letters of the context name for quick search).

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- Right-click and select the **Edit Context <Context_Name>** item from the popup menu or simply double-click the context.
- Edit context definition and data on the appropriate tabs of the Context Editor.

Drop context

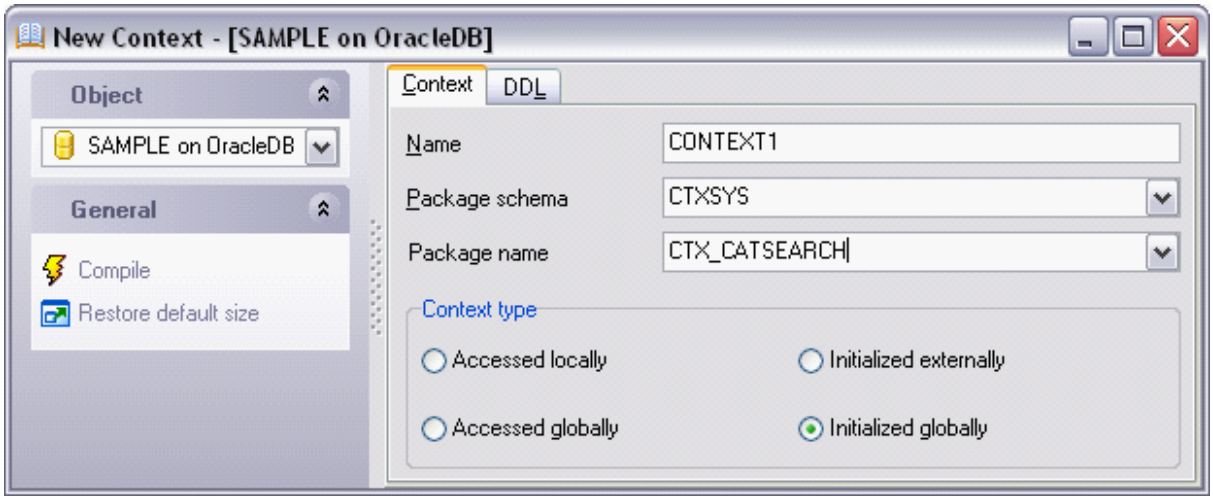
To drop a context:

- Select the context to drop in the explorer tree.
- Right-click and select the **Drop Context <Context_Name>** item from the popup menu.
- Confirm dropping in the dialog window.

5.4.1.1 Context Editor

The **Context Editor** allows you to define context basic properties. It opens when you create a new context or edit the existing one (see Create Context and Edit Context for details).

- Using navigation bar
- Editing context definition
- Editing object description
- Viewing DDL definition
- Browsing object dependencies



5.4.1.1.1 Using navigation bar

The navigation bar on the left allows you to:

Object bar:
- Select a database and a context for editing within the current window.

General bar:

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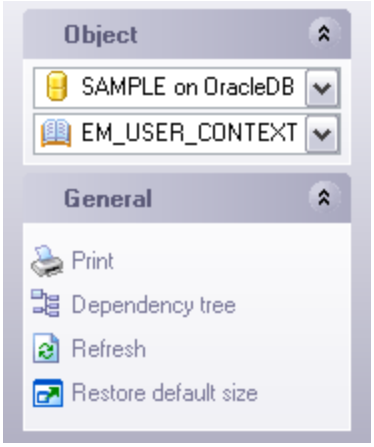
- Compile the current context definition
- Print metadata of the current context
- View Dependency Tree for the context
- Refresh the content of the active tab
- Bring the window to its default size

The next bar displays various actions according to the current page of **Context Editor**.



5.4.1.1.2 Editing Context definition

Name
Specify the name of the context namespace to create or modify. Context namespaces are always stored in the schema SYS.

Schema
Specify the schema owning package.

Package
Specify the PL/SQL package that sets or resets the context attributes under the namespace for a user session.

Context type

Accessed globally
Indicates that any application context set in namespace is accessible throughout the entire instance. This setting lets multiple sessions share application attributes.

Initialized externally
Indicates that the namespace can be initialized using an OCI interface when establishing a session.

Initialized globally
Indicates that the namespace can be initialized by the LDAP directory when a global user connects to the database. After the session is established, only the designated PL/SQL package can issue commands to write to any attributes inside the namespace.

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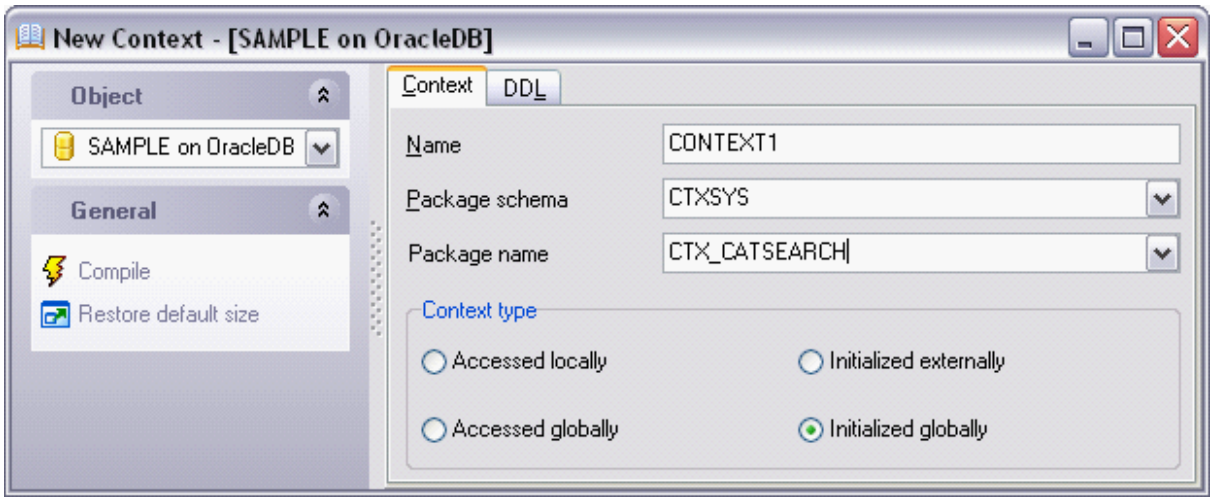

5.4.2 Users

User is an account through which you can log in to the database.

Create user

To create a new user:

- Select the **Database | New Object...** menu item.
- Select **User** in the New Object dialog.
- Edit user definition within the User Editor.

> **Hint**: To create new user you can also right-click the **Users** node of the explorer tree and select the **New User...** item from the popup menu.

To create a new user with the same properties as one of the existing users has:

- Select the **Database | Duplicate Object...** menu item.
- Follow the instructions of the Duplicate Object Wizard.

Edit user

To edit the existing user:

- Select the user for editing in the explorer tree (type the first letters of the user name for quick search).
- Right-click and select the **Edit User <User_Name>** item from the popup menu or simply double-click the user.
- Edit user definition and data on the appropriate tabs of the User Editor.

Drop user

To drop a user:

- Select the user to drop in the explorer tree.

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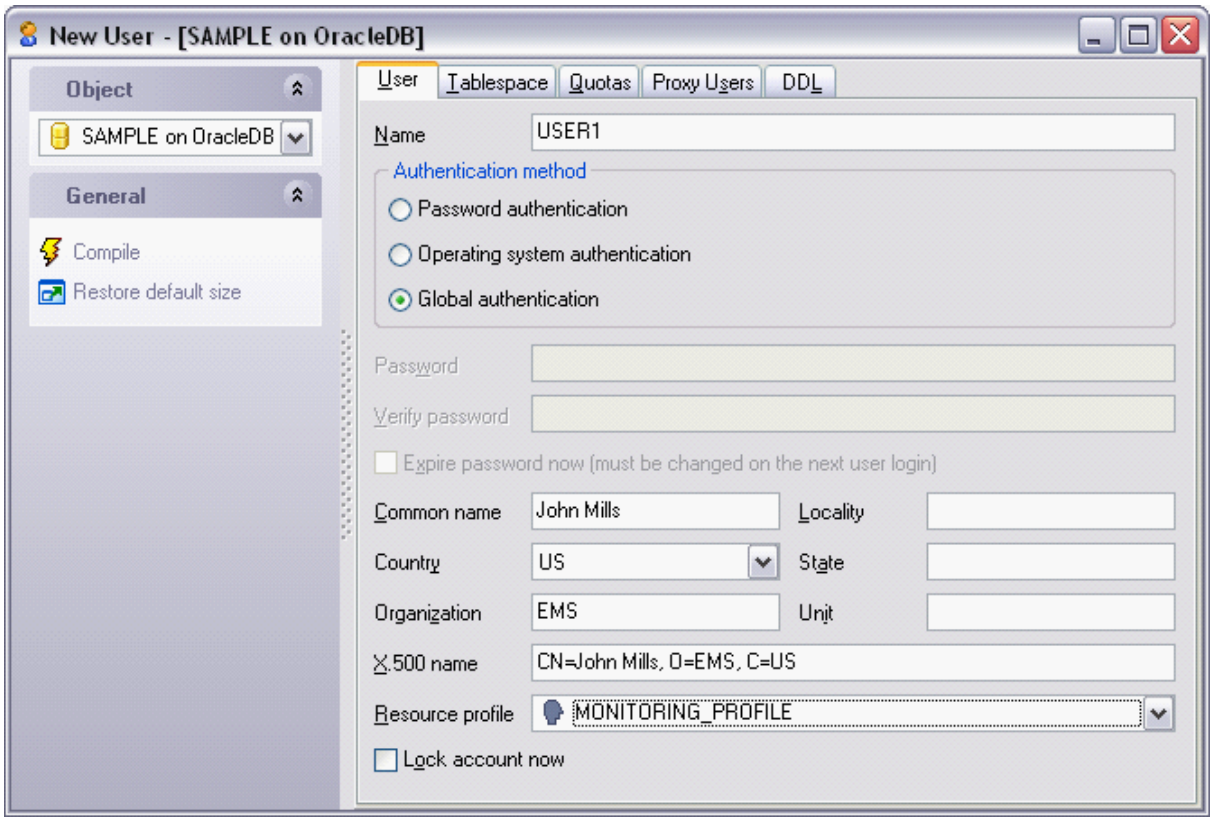
- Right-click and select the **Drop User <User_Name>** item from the popup menu.
- Confirm dropping in the dialog window.

5.4.2.1 User Editor

The **User Editor** allows you to define user properties and membership. It opens when you create a new user or edit the existing one (see Create User and Edit User for details).

- Using navigation bar
- Editing user definition
- Setting Tablespace parameters
- Setting quotas
- Defining Proxy Users
- Editing object description
- Viewing DDL definition
- Browsing object dependencies



5.4.2.1.1 Using navigation bar

The navigation bar on the left allows you to:

Object bar:
- Select a database and a user for editing within the current window.

General bar:

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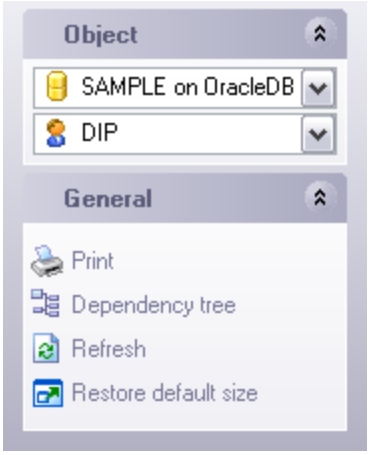
- Compile the current user definition
- Print metadata of the current user
- View Dependency Tree for the user
- Refresh the content of the active tab
- Bring the window to its default size

The next bar displays various actions according to the current page of **User Editor**.



5.4.2.1.2 Editing user definition

Name
Specify the name of the user to be created. This name can contain only characters from your database character set and comply with the naming rules.

Authentication method

Password authentication
Indicates that the user must specify password to log on to the database.

Operating system authentication
A user must be authenticated by an external service, such as an operating system or a third-party service. In this case, Oracle relies on authentication by the operating system or third-party service to ensure that a specific external user has access to a specific database user.

Global authentication
A user must be authorized by the enterprise directory service (Oracle Internet Directory). In this case you are to fill all necessary fields below, as follows: common name, country name, organization, X500 name, etc.

Expire password now
This setting forces the user or the DBA to change the password before the user can log in to the database.

Lock account now
Use this option to lock the user's account and disable access.

Resource profile

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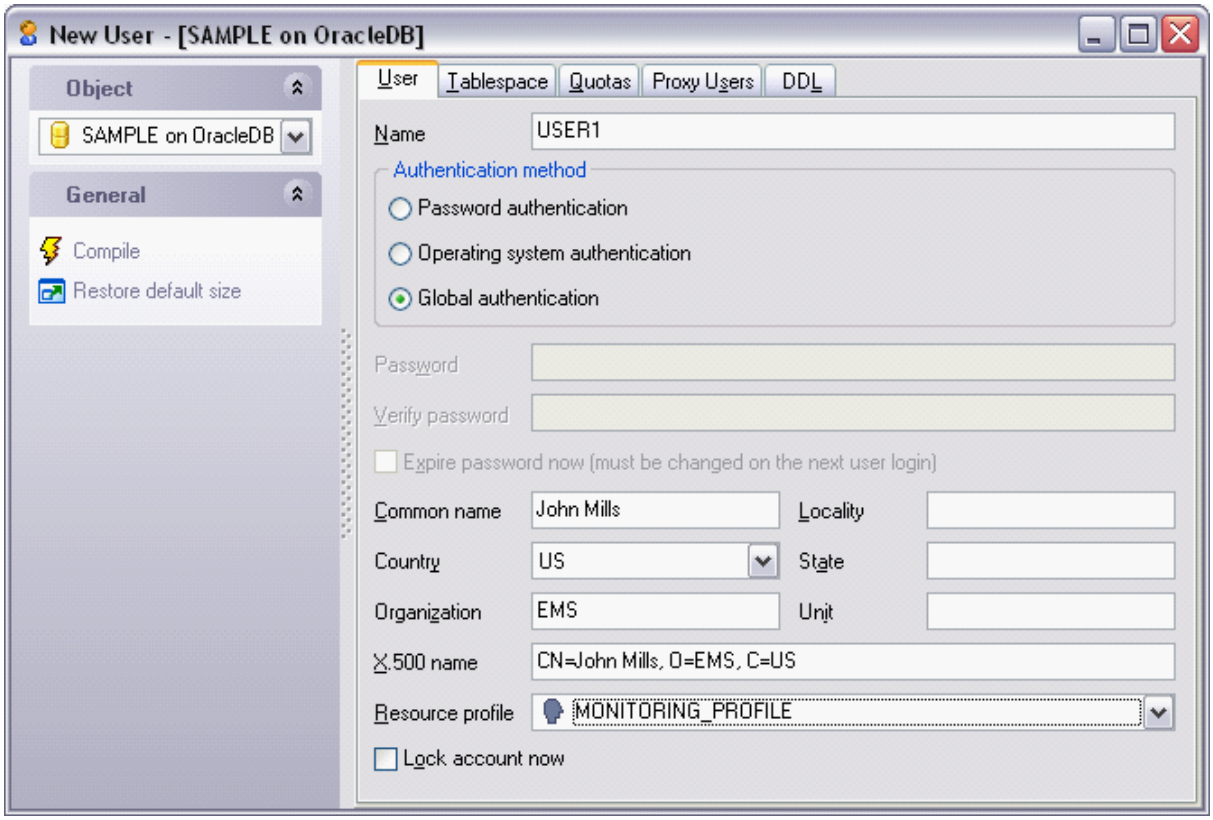
Specify the profile you want to assign to the user. The profile limits the amount of database resources the user can use.



5.4.2.1.3 Tablespace parameters

Default tablespace
In the **Name** field you are to specify the default tablespace for objects that the user creates.

Temporary tablespace
Specify the tablespace or tablespace group for the user's temporary segments in the **Name** field.

Quota on
Specify the maximum amount of space the user can allocate in the tablespace.

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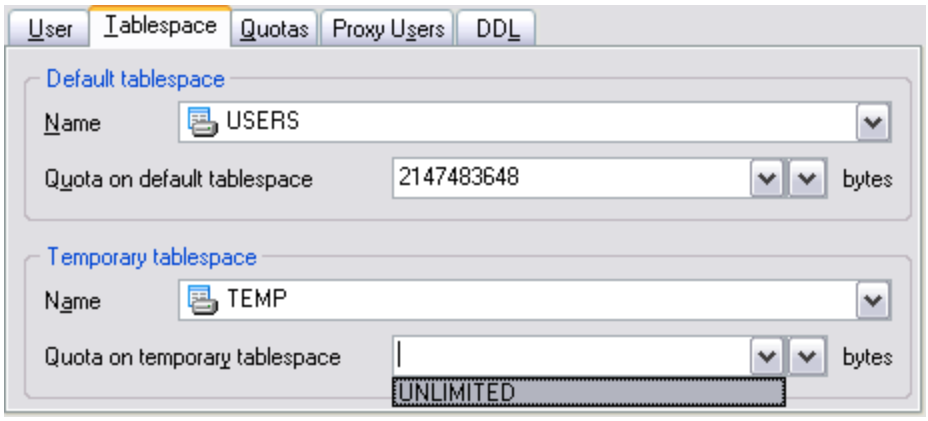
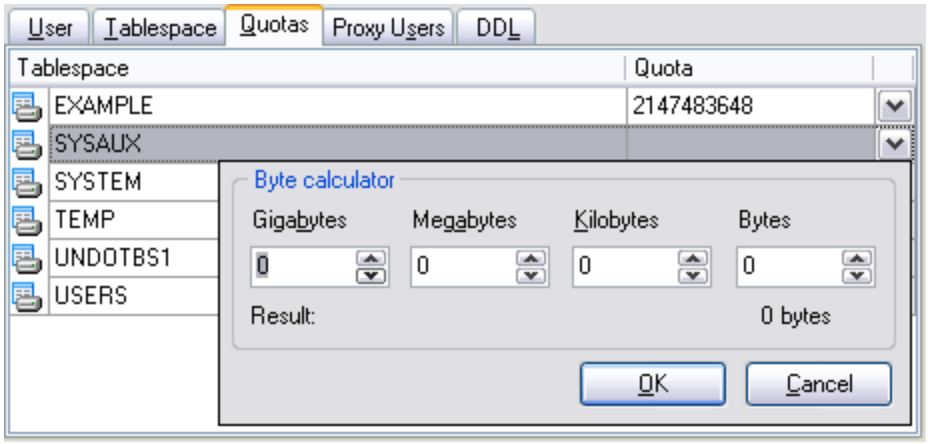


5.4.2.1.4 Setting quotas

The **Quotas** tab allows you to view and set the quotas for existing tablespaces. For your convenience you may call the built-in byte calculator by pressing the 'arrow down' button.



5.4.2.1.5 Proxy Users

This tab let you expose user to proxy use by database user, activate all, some, or none of the roles of the user, and specify whether authentication is required.

Proxy users
To include users to the list, move them from the **Available** list to the **Included** by double-clicking or dragging their names. To remove the users from the list, move them back in the same way. You can also use the arrow buttons to move the selected types (multiple selection can be performed using Ctrl or Shift).

After that you are to correlate selected users with the roles listed in the **Proxy user roles** list.

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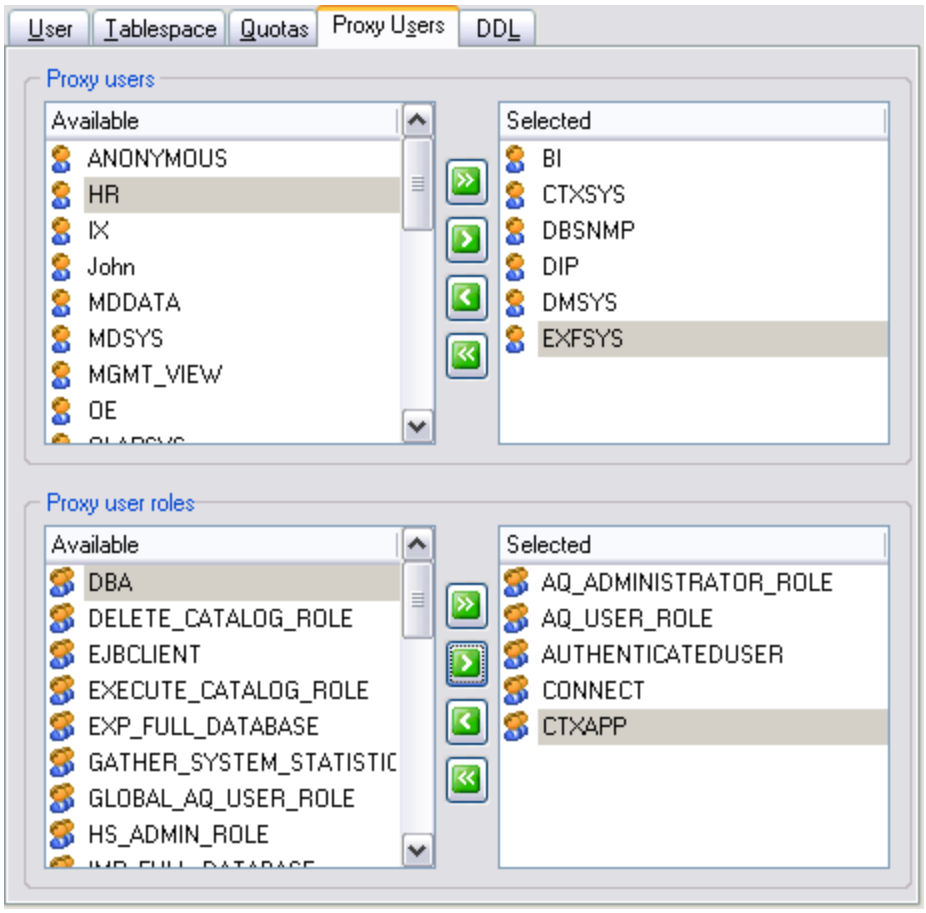

5.4.3 Roles

A **role** is a set of privileges that can be granted to users or to other roles. You can use roles to administer database privileges. You can add privileges to a role and then grant the role to a user. The user can then enable the role and exercise the privileges granted by the role.

Create role

To create a new role:

- Select the **Database | New Object...** menu item.
- Select **Role** in the New Object dialog.
- Edit role definition within the Role Editor.

Hint: To create new role you can also right-click the **Roles** node of the explorer tree and select the **New Role...** item from the popup menu.

To create a new role with the same properties as one of the existing roles has:

- Select the **Database | Duplicate Object...** menu item.
- Follow the instructions of the Duplicate Object Wizard.

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Edit role

To edit the existing role:

- Select the role for editing in the explorer tree (type the first letters of the role name for quick search).
- Right-click and select the **Edit Role <Role_Name>** item from the popup menu or simply double-click the role.
- Edit role definition and data on the appropriate tabs of the Role Editor.

Drop role

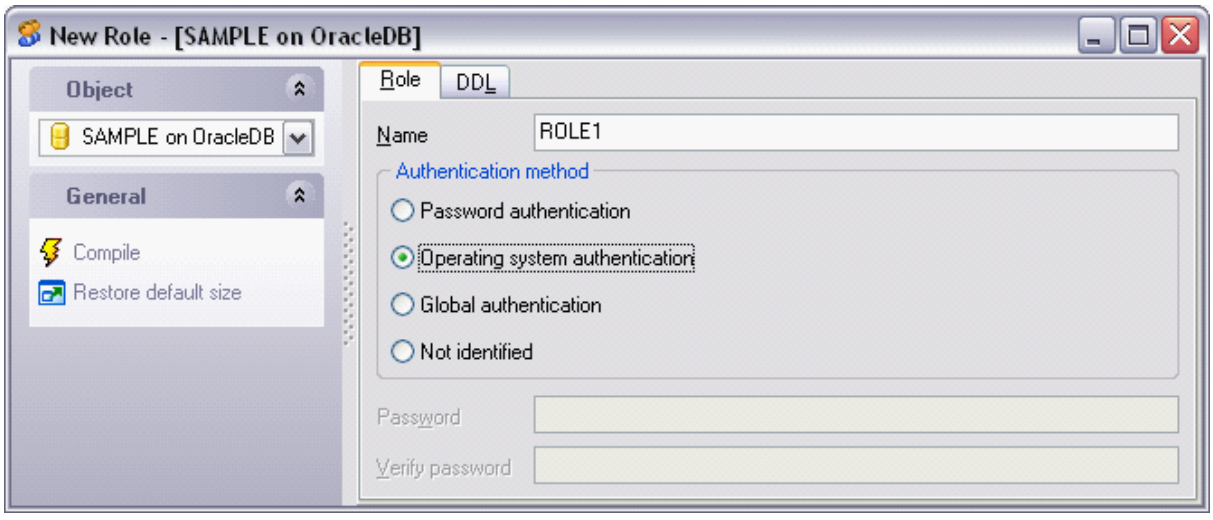
To drop a role:

- Select the role to drop in the explorer tree.
- Right-click and select the **Drop Role <Role_Name>** item from the popup menu.
- Confirm dropping in the dialog window.

5.4.3.1 Role Editor

The **Role Editor** allows you to define role basic properties. It opens when you create a new role or edit the existing one (see Create Role and Edit Role for details).

- Using navigation bar
- Editing role definition
- Editing object description
- Viewing DDL definition
- Browsing object dependencies



5.4.3.1.1 Using navigation bar

The navigation bar on the left allows you to:

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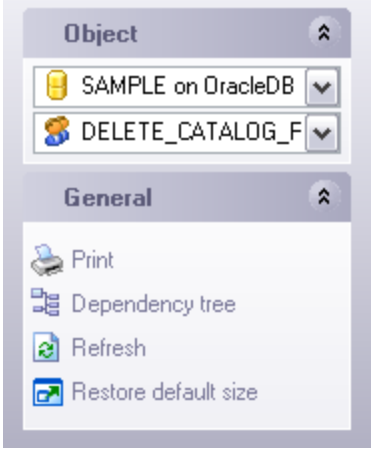
Object bar:
- Select a database and a role for editing within the current window.

General bar:
- Compile the current role definition
- Print metadata of the current role
- View Dependency Tree for the role
- Refresh the content of the active tab
- Bring the window to its default size

The next bar displays various actions according to the current page of **Role Editor**.



5.4.3.1.2 Editing role definition

Name
Specify the name of the role to be created.

Authentication method

Password authentication
Indicates that the user must specify password to log on to the database. Set the password and confirm it at the corresponding boxes.

Operating system authentication
A user must be authenticated by an external service, such as an operating system or a third-party service. In this case, Oracle relies on authentication by the operating system or third-party service to ensure that a specific external user has access to a specific database user.

Global authentication
A user must be authorized by the enterprise directory service (Oracle Internet Directory).

Not identified
Indicates that this role is authorized by the database and that no password is required to enable the role.

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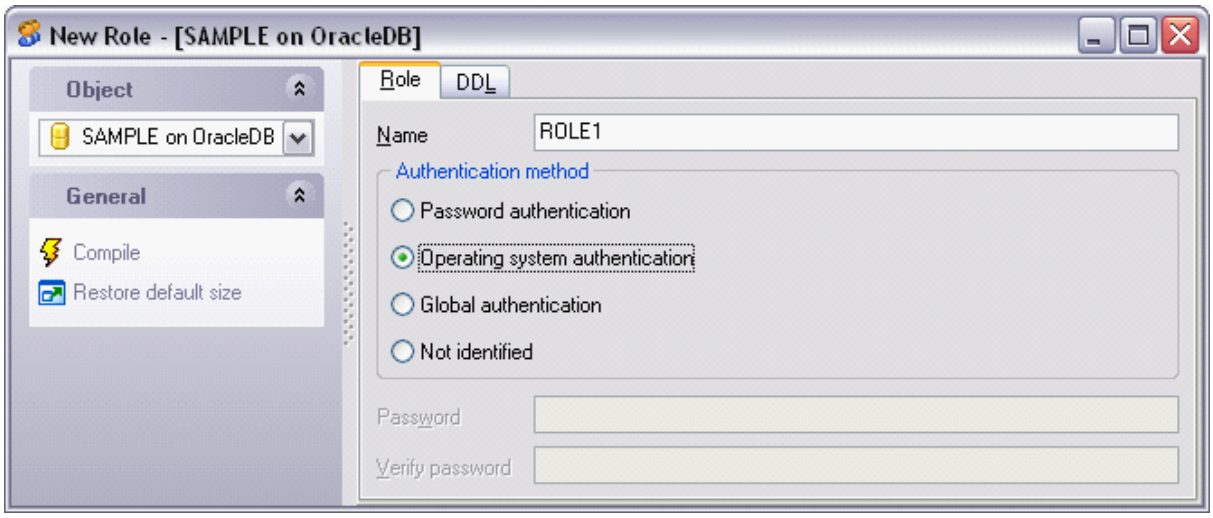

5.4.4 Profiles

Profile is a set of limits on database resources. If you assign the profile to a user, then that user cannot exceed these limits.

Create profile

To create a new profile:

- Select the **Database | New Object...** menu item.
- Select **Profile** in the New Object dialog.
- Edit profile definition within the Profile Editor.

> **Hint**: To create new profile you can also right-click the **Profiles** node of the explorer tree and select the **New Profile...** item from the popup menu.

To create a new profile with the same properties as one of the existing profiles has:

- Select the **Database | Duplicate Object...** menu item.
- Follow the instructions of the Duplicate Object Wizard.

Edit profile

To edit the existing profile:

- Select the profile for editing in the explorer tree (type the first letters of the profile name for quick search).
- Right-click and select the **Edit Profile <Profile_Name>** item from the popup menu or simply double-click the profile.
- Edit profile definition and data on the appropriate tabs of the Profile Editor.

Drop profile

To drop a profile:

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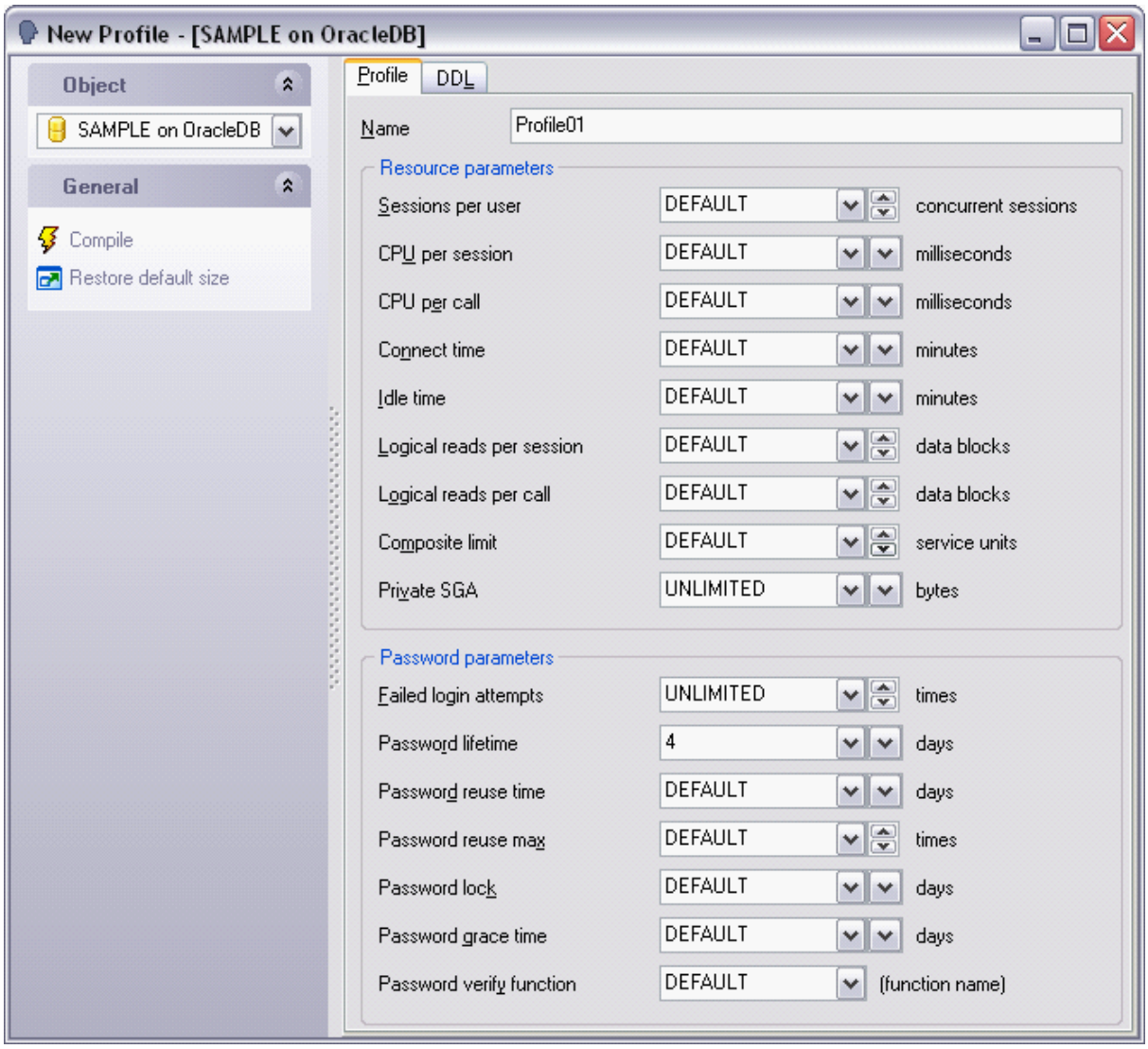
- Select the profile to drop in the explorer tree.
- Right-click and select the **Drop Profile <Profile_Name>** item from the popup menu.
- Confirm dropping in the dialog window.

5.4.4.1 Profile Editor

The **Profile Editor** allows you to define profile basic properties. It opens when you create a new profile or edit the existing one (see Create Profile and Edit Profile for details).

- Using navigation bar
- Editing profile definition
- Editing object description
- Viewing DDL definition
- Browsing object dependencies



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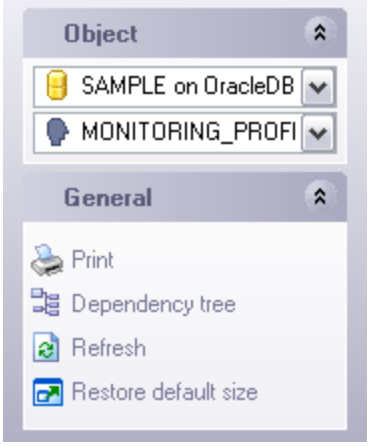
5.4.4.1.1 Using navigation bar

The navigation bar on the left allows you to:

Object bar:
- Select a database and a profile for editing within the current window.

General bar:
- Compile the current profile definition
- Print metadata of the current profile
- View Dependency Tree for the profile
- Refresh the content of the active tab
- Bring the window to its default size

The next bar displays various actions according to the current page of **Profile Editor**.



5.4.4.1.2 Editing Profile definition

Name
Specify the name of the profile to be created. Use profiles to limit the database resources available to a user for a single call or a single session.

Resource parameters

Sessions per user
Specify the number of concurrent sessions to which you want to limit the user.

CPU per session
Specify the CPU time limit for a session, expressed in hundredth of seconds.

CPU per call
Specify the CPU time limit for a call (a parse, execute, or fetch), expressed in hundredths of seconds.

Connect time
Specify the total elapsed time limit for a session, expressed in minutes.

Idle time
Specify the permitted periods of continuous inactive time during a session, expressed in

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minutes. Long-running queries and other operations are not subject to this limit.

Logical reads per session
Specify the permitted number of data blocks read in a session, including blocks read from memory and disk.

Logical reads per call
Specify the permitted number of data blocks read for a call to process a SQL statement (a parse, execute, or fetch).

Composite limit
Specify the total resource cost for a session, expressed in service units. Oracle calculates the total service units as a weighted sum of CPU_PER_SESSION, CONNECT_TIME, LOGICAL_READS_PER_SESSION, and PRIVATE_SGA.

Private SGA
Specify the amount of private space a session can allocate in the shared pool of the system global area (SGA).

Password parameters

Failed login attempts
Specify the number of failed attempts to log in to the user account before the account is locked.

Password lifetime
Specify the number of days the same password can be used for authentication. If you also set a value for PASSWORD_GRACE_TIME, the password expires if it is not changed within the grace period, and further connections are rejected.

Password reuse time
Specifies the number of days before which a password cannot be reused.

Password reuse max
Specifies the number of password changes required before the current password can be reused.

Password lock
Specify the number of days an account will be locked after the specified number of consecutive failed login attempts.

Password grace time
Specify the number of days after the grace period begins during which a warning is issued and login is allowed. If the password is not changed during the grace period, the password expires.

Password verify function
Lets a PL/SQL password complexity verification script be passed as an argument to the CREATE PROFILE statement.

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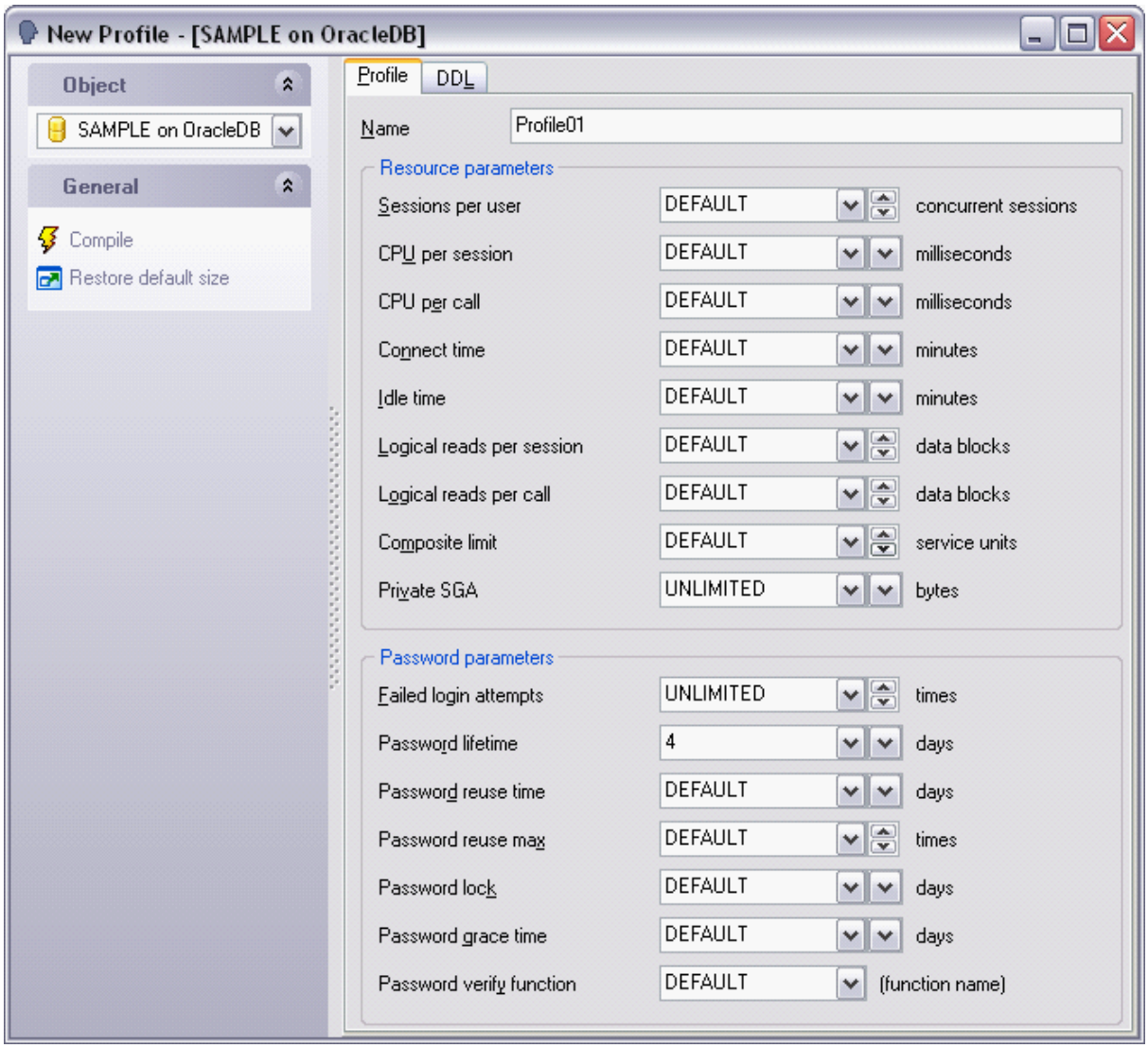

5.4.5 Consumer Groups

Consumer groups let you group user sessions together by resource requirements. Resource consumer groups are different from user roles; one database user can have different sessions assigned to different resource consumer groups.

Create consumer group

To create a new consumer group:

- Select the **Database | New Object...** menu item.
- Select **Consumer Group** in the New Object dialog.
- Edit consumer group definition within the Consumer Group Editor.

Hint: To create new consumer group you can also right-click the **Consumer Groups** node of the explorer tree and select the **New Consumer Group...** item from the popup menu.

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To create a new consumer group with the same properties as one of the existing consumer groups has:

- Select the **Database | Duplicate Object...** menu item.
- Follow the instructions of the Duplicate Object Wizard.

Edit consumer group

To edit the existing consumer group:

- Select the consumer group for editing in the explorer tree (type the first letters of the consumer group name for quick search).
- Right-click and select the **Edit Consumer Group <Consumer group_Name>** item from the popup menu or simply double-click the consumer group.
- Edit consumer group definition and data on the appropriate tabs of the Consumer Group Editor.

Drop consumer group

To drop a consumer group:

- Select the consumer group to drop in the explorer tree.
- Right-click and select the **Drop Consumer Group <Consumer Group_Name>** item from the popup menu.
- Confirm dropping in the dialog window.

5.4.5.1 Consumer Group Editor

The **Consumer Group Editor** allows you to define consumer group basic properties. It opens when you create a new consumer group or edit the existing one (see Create Consumer Group and Edit Consumer Group for details).

- Using navigation bar
- Editing consumer group definition
- Editing object description
- Viewing DDL definition
- Browsing object dependencies

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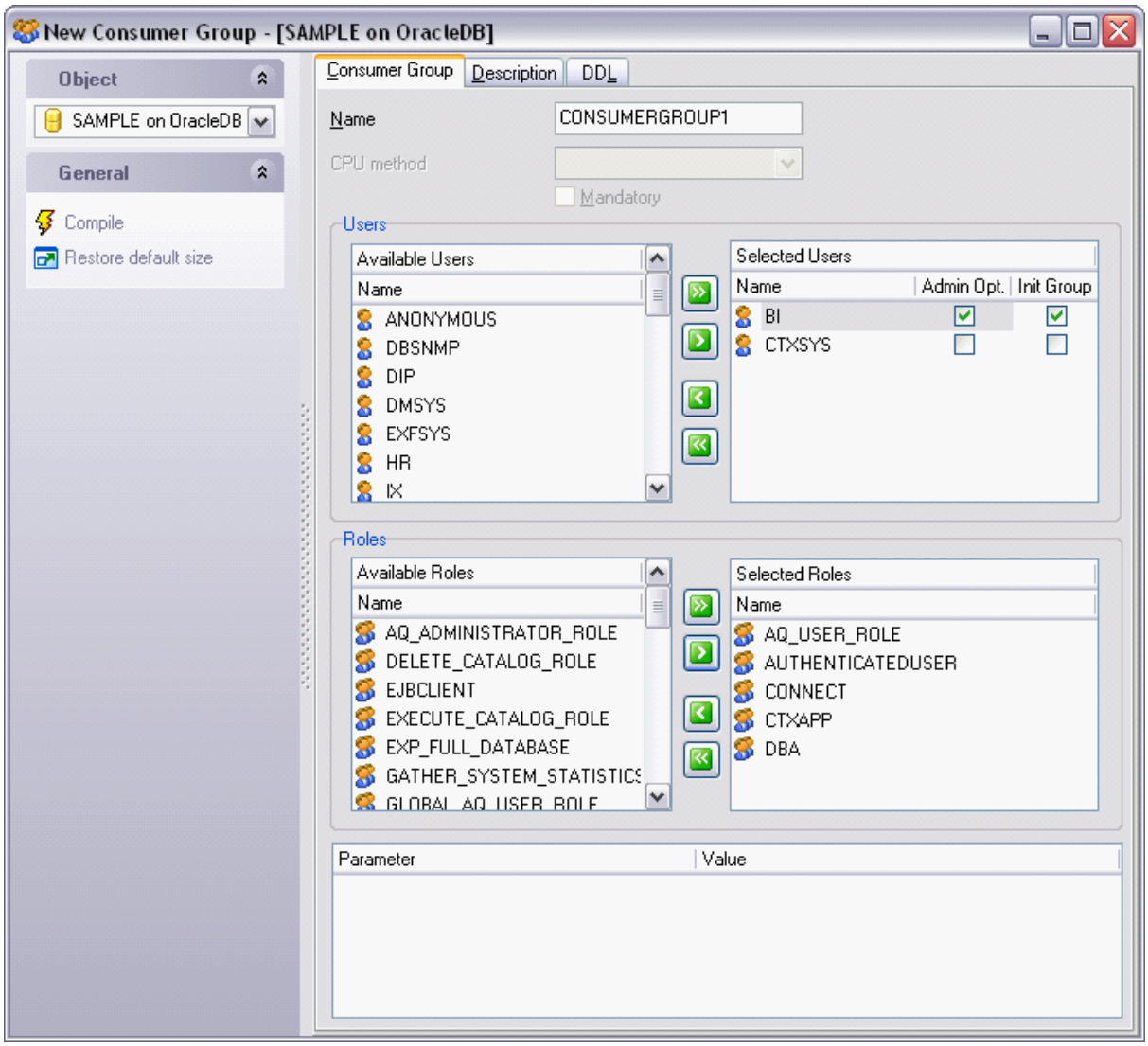

5.4.5.1.1 Using navigation bar

The navigation bar on the left allows you to:

Object bar:
- Select a database and a consumer group for editing within the current window.

General bar:
- Compile the current consumer group definition
- Print metadata of the current consumer group
- View Dependency Tree for the consumer group
- Refresh the content of the active tab
- Bring the window to its default size

The next bar displays various actions according to the current page of **Consumer Group Editor**.

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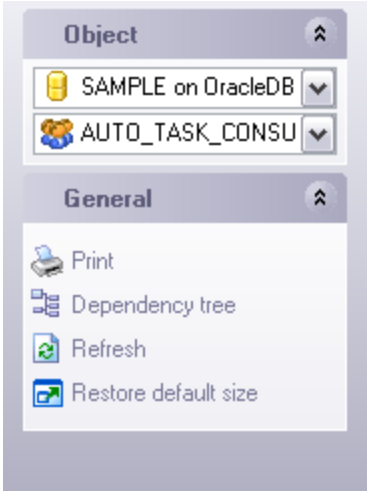

5.4.5.1.2 Editing Consumer Groups

Use the **Users** and **Roles** lists to form a consumer group.

Name
The name of the consumer group to be created.

Users / **Roles**
To include users/roles to the list, move them from the **Available** list to the **Included** by double-clicking or dragging their names. To remove the users/roles from the list, move them back in the same way. You can also use the arrow buttons to move the selected items (multiple selection can be performed using Ctrl or Shift).

Admin opt
If this option is checked the users granted switch privilege for the consumer group may also grant switch privileges for that consumer group to others.

Init group
The initial consumer group of a user is the consumer group to which any session created by that user initially belongs. This option sets the initial resource consumer group for a user.

The **CPU method** and **Mandatory** controls are disabled for future use as they are not supported in the current versions of Oracle.

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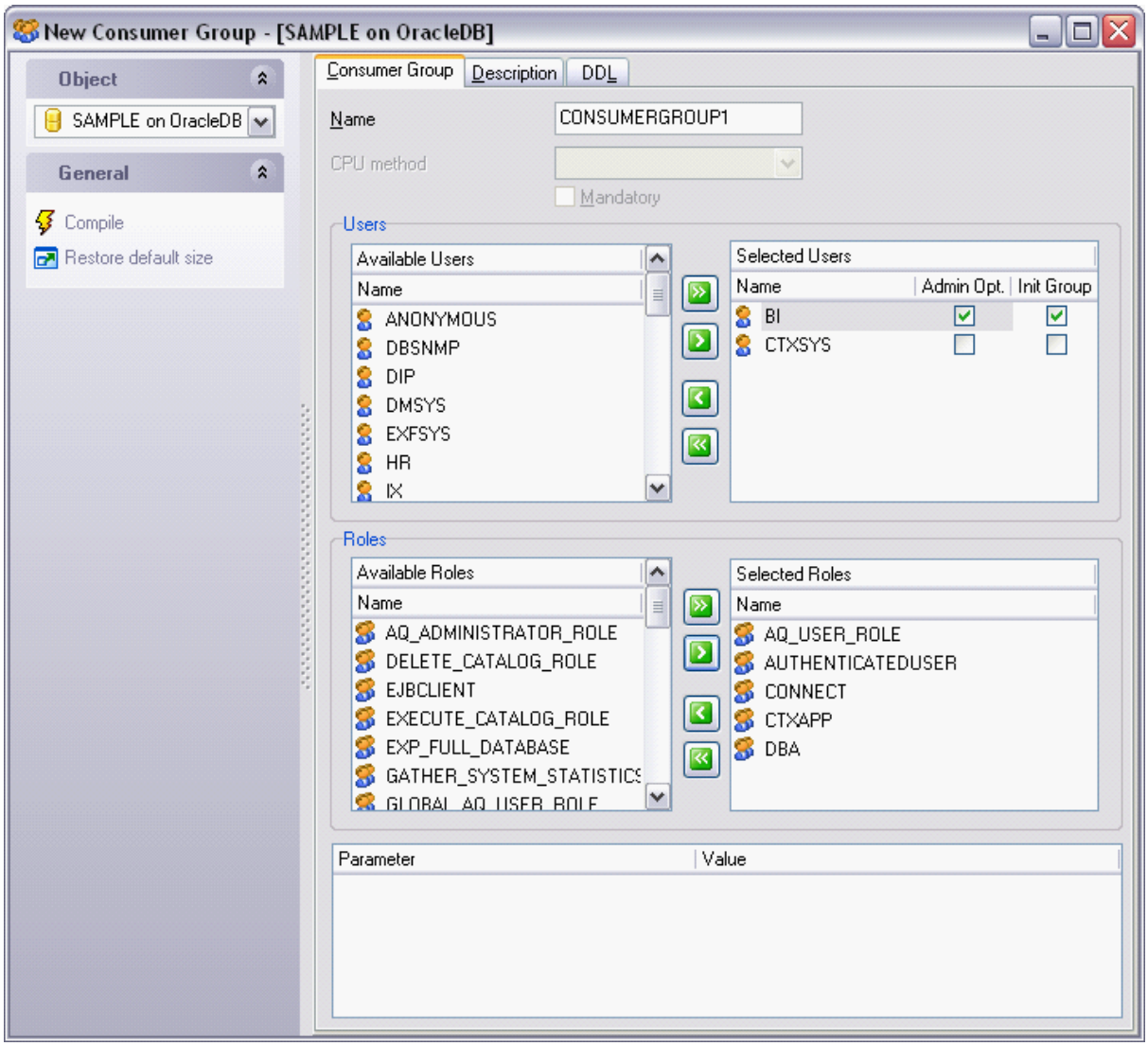

5.4.6 Resource Plans

Use Resource Plan Editor to define resource plans.

Create resource plan

To create a new resource plan:

- Select the **Database | New Object...** menu item.
- Select **Resource Plan** in the New Object dialog.
- Edit resource plan definition within the Resource Plan Editor.

> **Hint**: To create new resource plan you can also right-click the **Resource Plans** node of the explorer tree and select the **New Resource Plan...** item from the popup menu.

To create a new resource plan with the same properties as one of the existing resource plans has:

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- Select the **Database | Duplicate Object...** menu item.
- Follow the instructions of the Duplicate Object Wizard.

Edit resource plan

To edit the existing resource plan:

- Select the resource plan for editing in the explorer tree (type the first letters of the resource plan name for quick search).
- Right-click and select the **Edit Resource Plan <Consumer group_Name>** item from the popup menu or simply double-click the resource plan.
- Edit resource plan definition and data on the appropriate tabs of the Resource Plan Editor.

Drop resource plan

To drop a resource plan:

- Select the resource plan to drop in the explorer tree.
- Right-click and select the **Drop Resource Plan <Resource Plan_Name>** item from the popup menu.
- Confirm dropping in the dialog window.

5.4.6.1 Resource Plan Editor

The **Resource Plan Editor** allows you to define resource plan properties. It opens when you create a new resource plan or edit the existing one (see Create Resource Plan and Edit Resource Plan for details).

- Using navigation bar
- Editing resource plan definition
- Resource Plan Directives
- Editing object description
- Viewing DDL definition
- Browsing object dependencies

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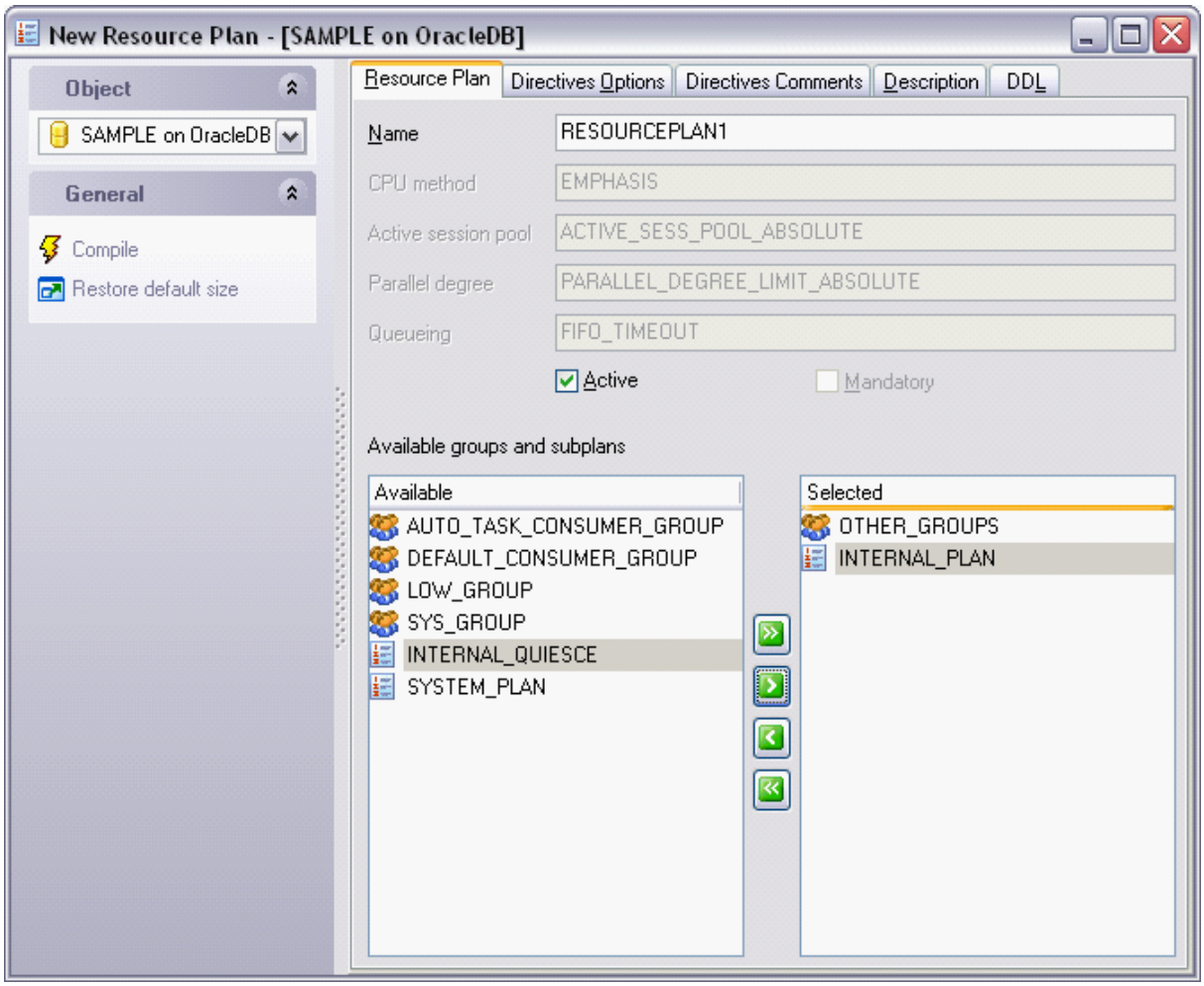

5.4.6.1.1 Using navigation bar

The navigation bar on the left allows you to:

Object bar:
- Select a database and a resource plan for editing within the current window.

General bar:
- Compile the current resource plan definition
- Print metadata of the current resource plan
- View Dependency Tree for the resource plan
- Refresh the content of the active tab
- Bring the window to its default size

The next bar displays various actions according to the current page of **Resource Plan Editor**.

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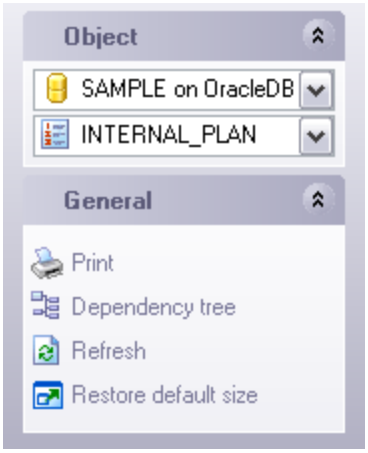

5.4.6.1.2 Editing Resource Plan

Use Resource Plan Editor to define resource plans.

Name
The name of the resource plan.

Available consumer group and subplans

To include consumer group / subplan to the list, move them from the **Available** list to the **Included** by double-clicking or dragging their names. To remove the consumer group / subplan from the list, move them back in the same way. You can also use the arrow buttons to move the selected items (multiple selection can be performed using Ctrl or Shift).

Active
Immediately activates a resource plan after compiling.

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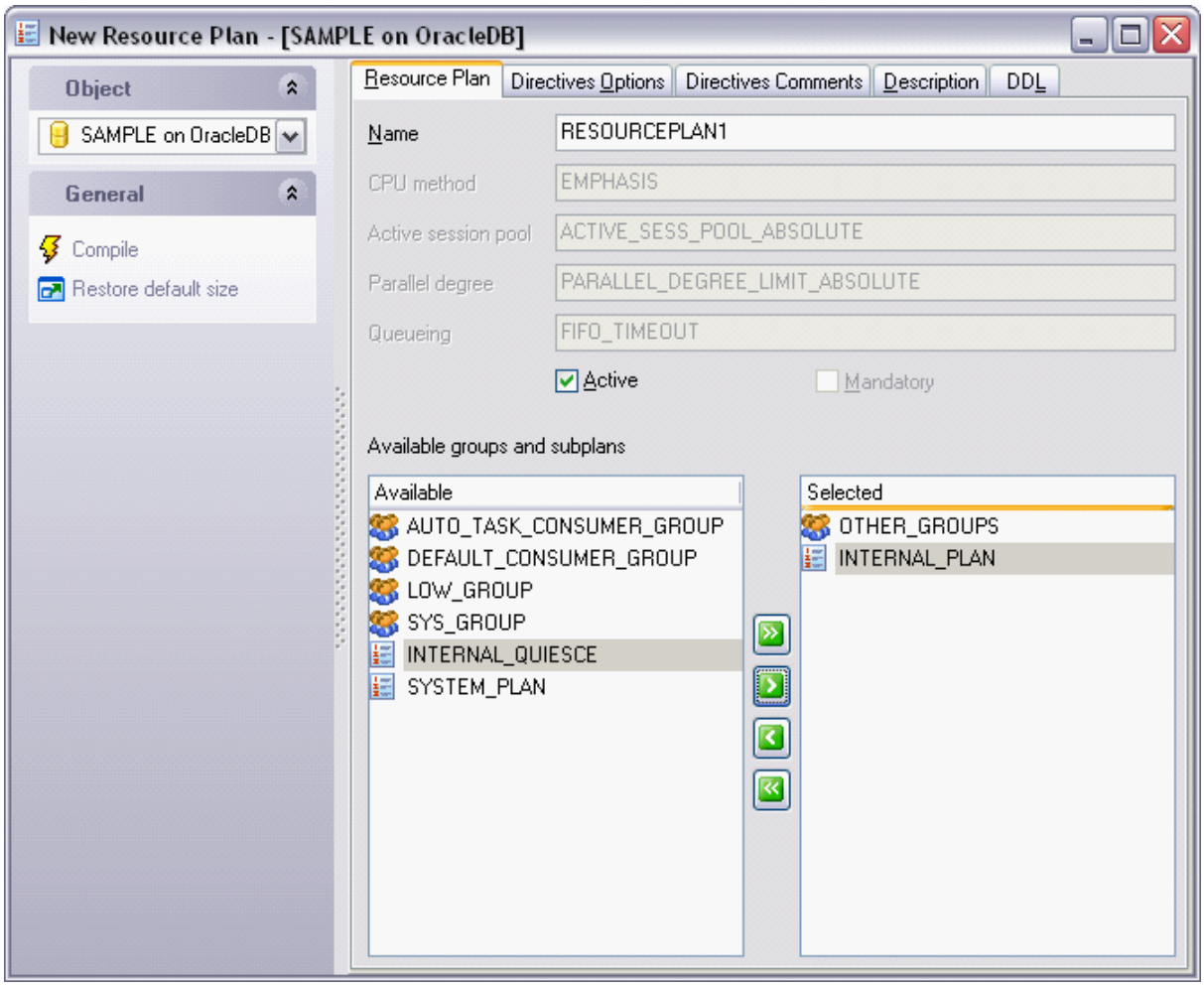

5.4.6.1.3 Resource Plan Directives

For each consumer group / subplan previously added at the **Resource Plan** tab you can set a number of parameters (directives options).

Name
The name of the consumer group or subplan.

Level 1 - Level 8
Specify the CPU percentage at the corresponding level.

Degree Of Parallelism
Specify a limit on the degree of parallelism for any operation.

Active Session Pool
Specify maximum number of concurrently active sessions for a consumer group.

Timeout
Specify time (in seconds) after which a job in the inactive session queue (waiting for execution) will time out.

Max Undo Pool

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Set a maximum in kilobytes (K) on the total amount of undo generated by a consumer group.

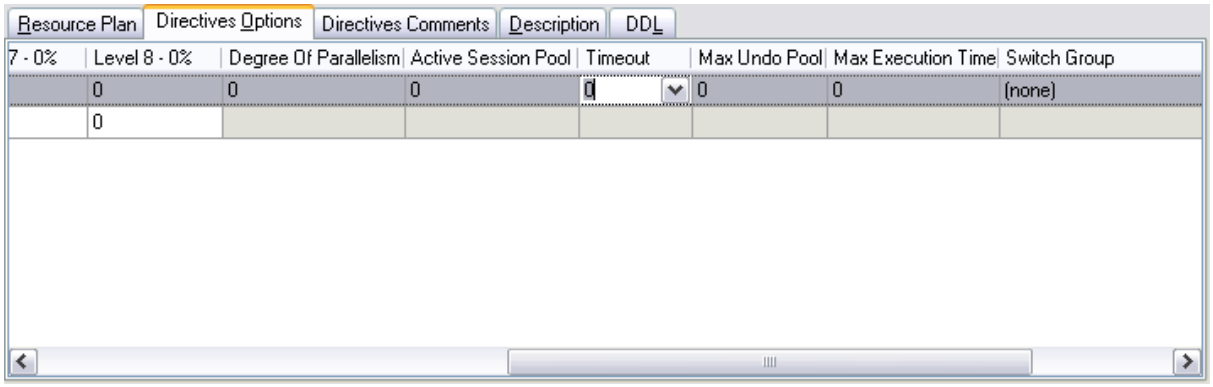
Max Execution Time
Specify the maximum execution time (in seconds) allowed for a session.

Switch Group
Specify consumer group to which this session is switched if other switch criteria is met.

Switch Time
Specify time (in seconds) that a session can execute before an action is taken.

Switch Estimate
If checked, Oracle uses its execution time estimate to automatically switch the consumer group of an operation before beginning its execution.

You can create optional comments to consumer group / subplan directives at the **Directives Comments** tab.



5.4.7 Directories

A **directory** object specifies an alias for a directory on the server file system where external binary file LOBs (BFILEs) and external table data are located. You can use directory names when referring to BFILEs in your PL/SQL code and OCI calls, rather than hard coding the operating system path name, for management flexibility.

Create directory

To create a new **directory**:

- Select the **Database | New Object...** menu item.
- Select D**irectory** in the New Object dialog.
- Edit directory definition within the Directory Editor.

Hint: To create new directory you can also right-click the **Directories** node of the explorer tree and select the **New Directory...** item from the popup menu.

To create a new directory with the same properties as one of the existing directories has:

- Select the **Database | Duplicate Object...** menu item.

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- Follow the instructions of the Duplicate Object Wizard.

Edit directory

To edit the existing directory:

- Select the directory for editing in the explorer tree (type the first letters of the directory name for quick search).
- Right-click and select the **Edit Directory <Directory_Name>** item from the popup menu or simply double-click the directory.
- Edit directory definition and data on the appropriate tabs of the Directory Editor.

Drop directory

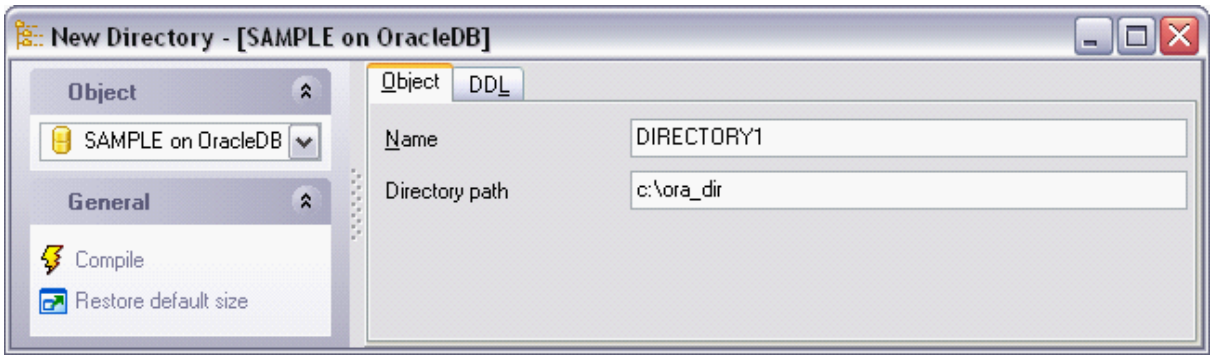
To drop a directory:

- Select the directory to drop in the explorer tree.
- Right-click and select the **Drop Directory <Directory_Name>** item from the popup menu.
- Confirm dropping in the dialog window.

5.4.7.1 Directory Editor

The **Directory Editor** allows you to define directory properties. It opens when you create a new directory or edit the existing one (see Create Directory and Edit Directory for details).

- Using navigation bar
- Editing directory definition
- Editing object description
- Viewing DDL definition
- Browsing object dependencies



5.4.7.1.1 Using navigation bar

The navigation bar on the left allows you to:

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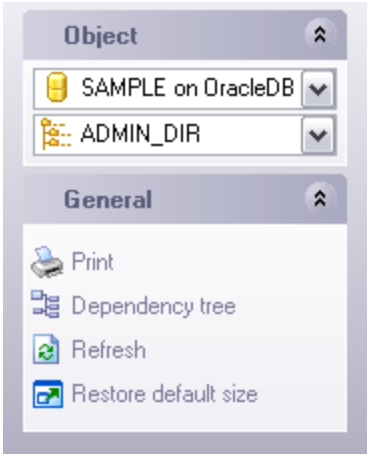
Object bar:
- Select a database and an object for editing within the current window.

General bar:
- Compile the current object definition
- Print metadata of the current object
- View Dependency Tree for the object
- Refresh the content of the active tab
- Bring the window to its default size

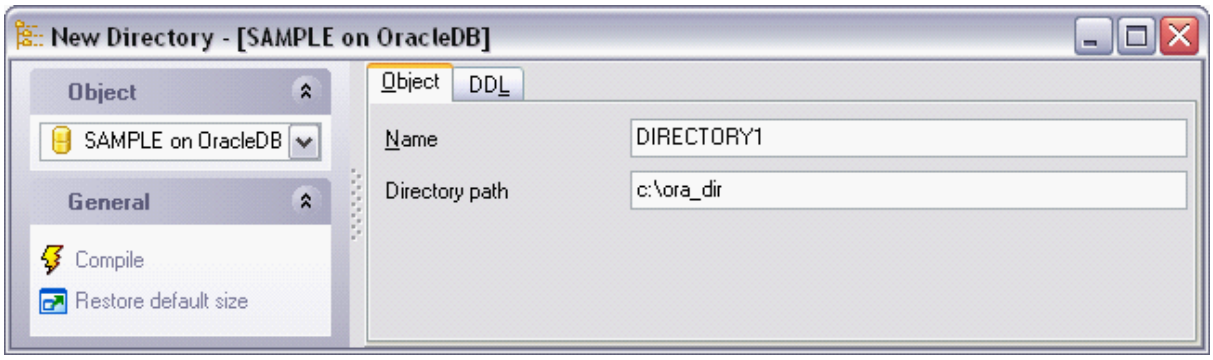
The next bar displays various actions according to the current page of **Profile Editor**.



5.4.7.1.2 Editing Directory definition

Name
Specify the name of the directory object to be created. The maximum length of directory is 30 bytes. You cannot qualify a directory object with a schema name.

Directory path
Specify the full path name of the operating system directory of the server where the files are located.



5.4.8 Tablespaces

Tablespace is an allocation of space in the database that can contain schema objects.

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Create tablespace

To create a new tablespace:

- Select the **Database | New Object...** menu item.
- Select **Tablespace** in the New Object dialog.
- Edit tablespace definition within the Tablespace Editor.

> **Hint**: To create new tablespace you can also right-click the **Tablespaces** node of the explorer tree and select the **New Tablespace...** item from the popup menu.

To create a new tablespace with the same properties as one of the existing tablespaces has:

- Select the **Database | Duplicate Object...** menu item.
- Follow the instructions of the Duplicate Object Wizard.

Edit tablespace

To edit the existing tablespace:

- Select the tablespace for editing in the explorer tree (type the first letters of the tablespace name for quick search).
- Right-click and select the **Edit Tablespace <Tablespace_Name>** item from the popup menu or simply double-click the tablespace.
- Edit tablespace definition and data on the appropriate tabs of the Tablespace Editor.

Drop tablespace

To drop a tablespace:

- Select the tablespace to drop in the explorer tree.
- Right-click and select the **Drop Tablespace <Tablespace_Name>** item from the popup menu.
- Confirm dropping in the dialog window.

5.4.8.1 Tablespace Editor

The **Tablespace Editor** allows you to define tablespace basic properties. It opens when you create a new tablespace or edit the existing one (see Create Tablespace and Edit Tablespace for details).

- Using navigation bar
- Editing tablespace definition
- Managing tablespace files
- Object storage attributes
- Editing object description
- Viewing DDL definition
- Browsing object dependencies

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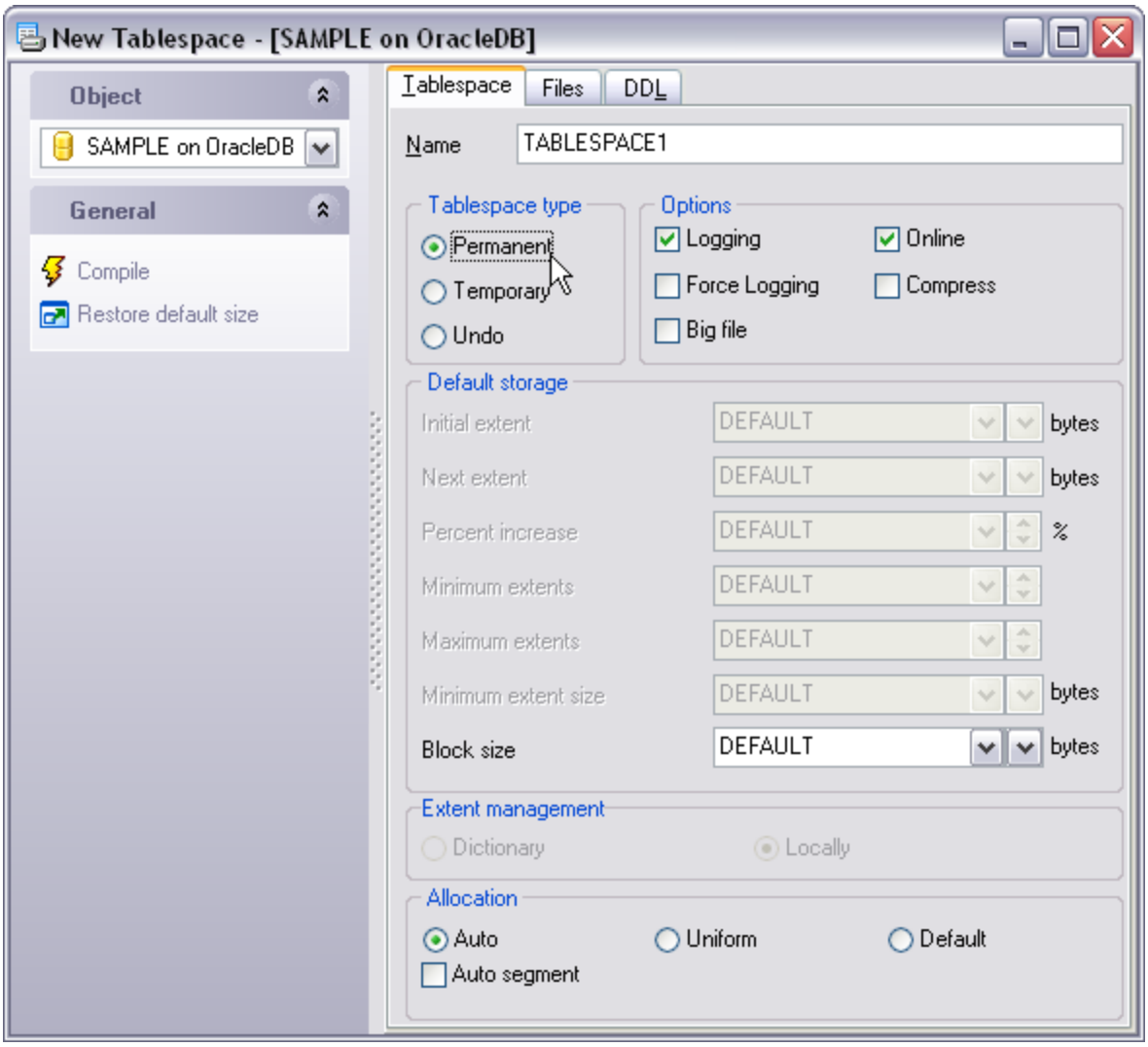

5.4.8.1.1 Using navigation bar

The navigation bar on the left allows you to:

Object bar:
- Select a database and an object for editing within the current window.

General bar:
- Compile the current object definition
- Print metadata of the current object
- View Dependency Tree for the object
- Refresh the content of the active tab
- Bring the window to its default size

The next bar displays various actions according to the current page of **Tablespace Editor**.

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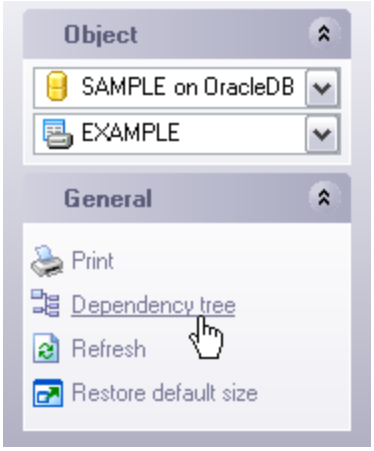

5.4.8.1.2 Editing Tablespace

Name
Specify the name of the tablespace to be created.

Tablespace type

Permanent
Contains persistent schema objects. Objects in permanent tablespaces are stored in datafiles.

Temporary
contains schema objects only for the duration of a session. Objects in temporary tablespaces are stored in tempfiles.

Undo
A type of permanent tablespace used by Oracle Database to manage undo data if you are running your database in automatic undo management mode.

Logging
Check the option to set the default logging attributes of all tables, indexes, materialized views, materialized view logs, and partitions within the tablespace.

Force logging
Use this option to put the tablespace into FORCE LOGGING mode. Oracle Database will log all changes to all objects in the tablespace except changes to temporary segments, overriding any NOLOGGING setting for individual objects.

Big file
Use this clause to specify that the tablespace is a bigfile tablespace. A bigfile tablespace contains only one datafile or tempfile, which can contain up to approximately 4 billion (232) blocks with the maximum size of the single datafile or tempfile is 128 terabytes (TB) (for a tablespace with 32K blocks).

Online
When checked, the tablespace is available immediately after creation to users who have

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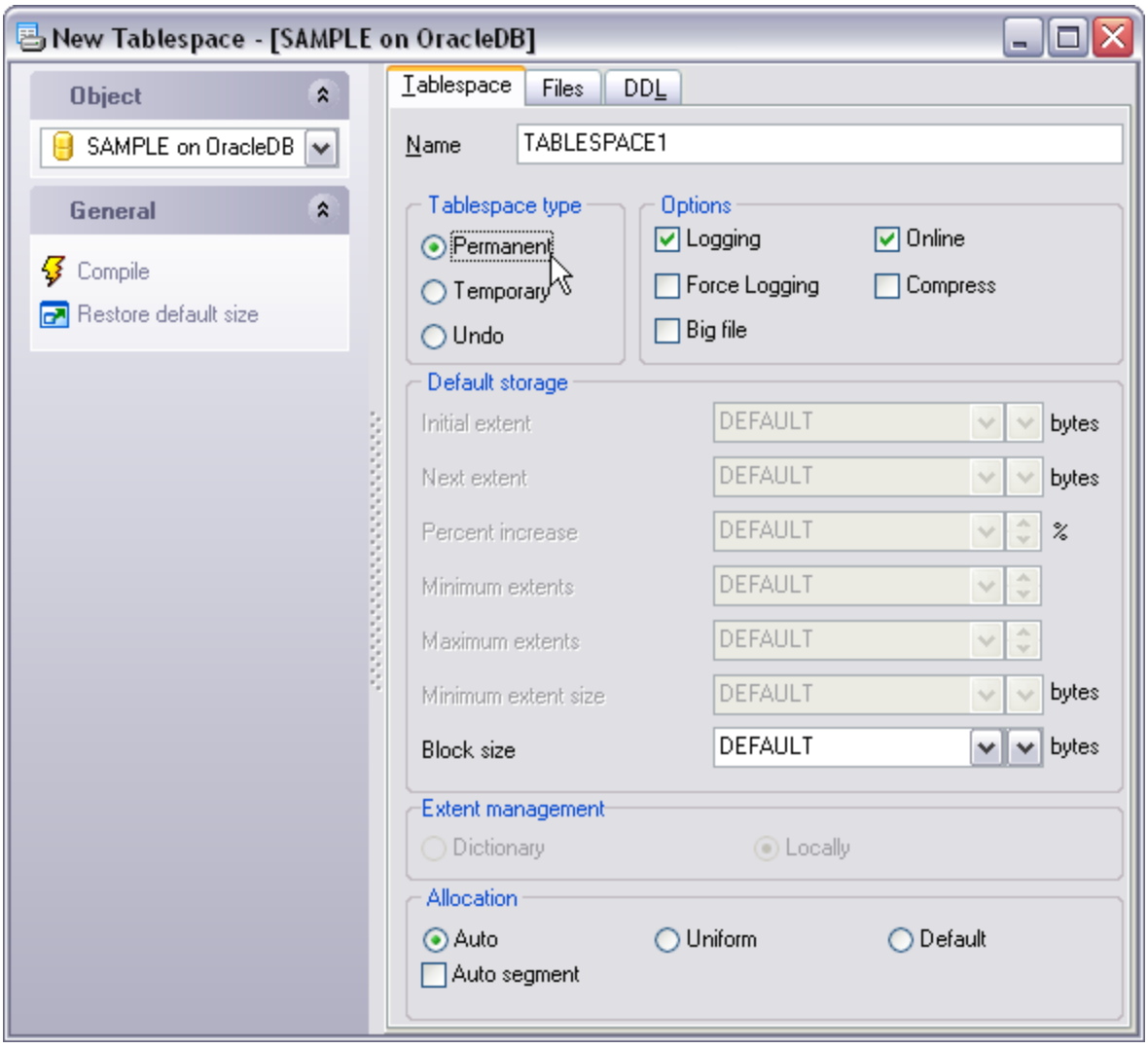
been granted access to the tablespace.

Compress
This clause lets you specify default default compression of data for all tables created in the tablespace (not valid for a temporary tablespace).

Default storage
Valid only for a dictionary-managed tablespace. This group lets you specify default storage parameters for all objects created in the tablespace. For more information see Storage attributes.



Extent management

Dictionary
Use this option if you want the tablespace to be managed using dictionary tables. In this case set the **Default storage** parameters.

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Locally
Check this option if you want the tablespace to be locally managed. Locally managed tablespaces have some part of the tablespace set aside for a bitmap.

Allocation

Auto
Specifies that the tablespace is system managed. Users cannot specify an extent size.

Uniform
Specifies that the tablespace is managed with uniform extents of amount of bytes set in the **Block size** field of the **Extent management** group.

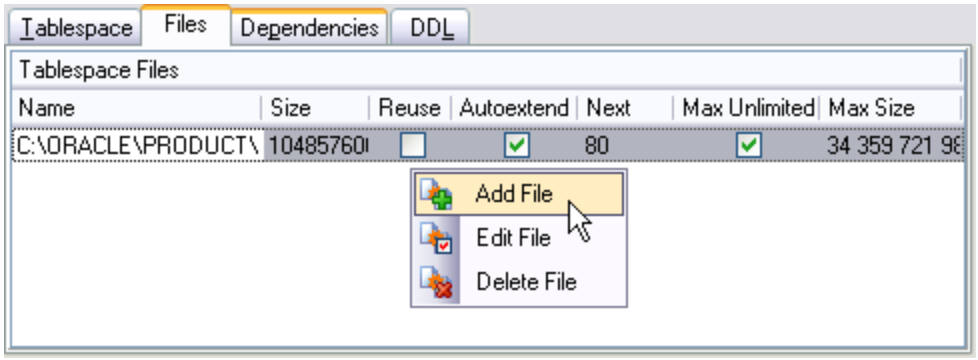
Default
Check the option to use default settings for table space management.

Auto segment
Use the option if you want the database to manage the free space of segments in the tablespace using a bitmap. If you checked this option, then the database ignores any specification for PCTUSED, FREELIST, and FREELIST GROUPS in subsequent storage specifications for objects in this tablespace.

5.4.8.1.3 Managing Tablespace files

Specify the datafiles to make up the permanent tablespace or the tempfiles to make up the temporary tablespace.

Use the corresponding items of context menu either to add, remove or edit file.



Adding/editing a file

Name
Specify the name of either a datafile or tempfile.

Size
Specify the size of the file in bytes.

Reuse
Check the box to allow Oracle to reuse an existing file.

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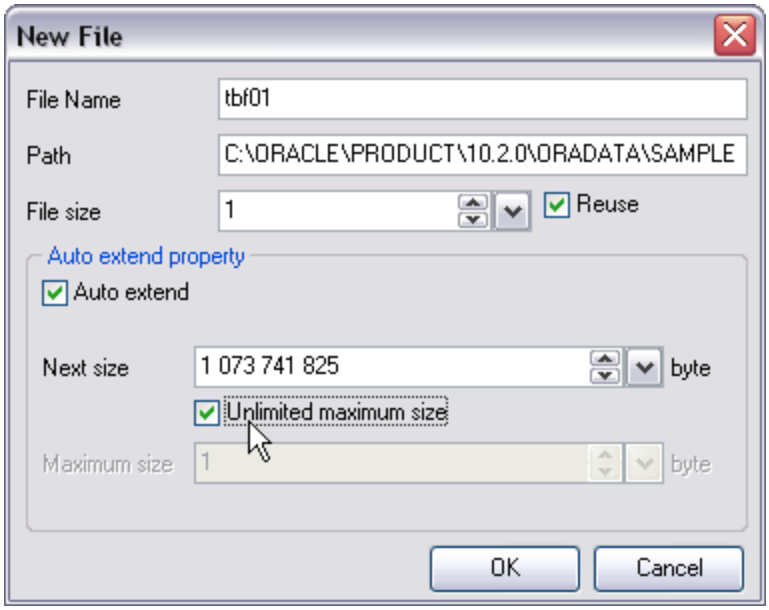
Autoextension
Enables or disables the automatic extension of a new or existing datafile or tempfile.

Next size
Specify the size in bytes of the next increment of disk space to be allocated automatically when more extents are required.

Maximum size
Specify the maximum disk space allowed for automatic extension of the datafile.

Unlimited maximum size
Check the option if you do not want to limit the disk space that Oracle can allocate to the datafile or tempfile.



5.4.9 Rollback Segments

Rollback segment is an object that Oracle Database uses to store data necessary to reverse, or undo, changes made by transactions.

Create rollback segment

To create a new rollback segment:

- Select the **Database | New Object...** menu item.
- Select **Rollback Segment** in the New Object dialog.
- Edit rollback segment definition within the Rollback Segment Editor.

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Hint: To create new rollback segment you can also right-click the **Rollback Segments** node of the explorer tree and select the **New Rollback Segment...** item from the popup menu.

To create a new rollback segment with the same properties as one of the existing rollback segments has:

- Select the **Database | Duplicate Object...** menu item.
- Follow the instructions of the Duplicate Object Wizard.

Edit rollback segment

To edit the existing rollback segment:

- Select the rollback segment for editing in the explorer tree (type the first letters of the rollback segment name for quick search).
- Right-click and select the **Edit Rollback Segment <Rollback Segment_Name>** item from the popup menu or simply double-click the rollback segment.
- Edit rollback segment definition and data on the appropriate tabs of the Rollback Segment Editor.

Drop rollback segment

To drop a rollback segment:

- Select the rollback segment to drop in the explorer tree.
- Right-click and select the **Drop Rollback Segment <Rollback Segment_Name>** item from the popup menu.
- Confirm dropping in the dialog window.

5.4.9.1 Rollback Segment Editor

The **Rollback Segment Editor** allows you to define rollback segment basic properties. It opens when you create a new rollback segment or edit the existing one (see Create Rollback Segment and Edit Rollback Segment for details).

- Using navigation bar
- Editing rollback segment definition
- Editing object description
- Viewing DDL definition
- Browsing object dependencies

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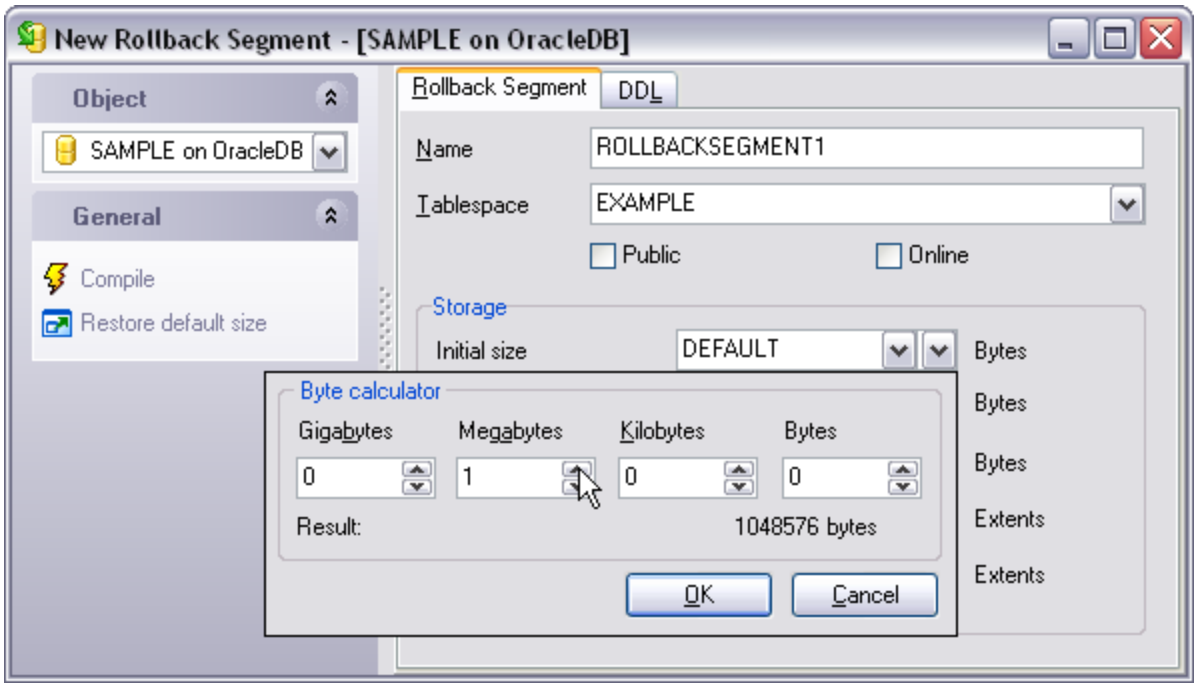


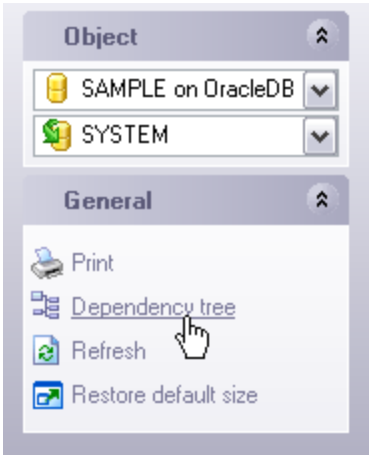
5.4.9.1.1 Using navigation bar

The navigation bar on the left allows you to:

Object bar:
- Select a database and an object for editing within the current window.

General bar:
- Compile the current object definition
- Print metadata of the current object
- View Dependency Tree for the object
- Refresh the content of the active tab
- Bring the window to its default size

The next bar displays various actions according to the current page of **Rollback Segment Editor**.



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5.4.9.1.2 Editing Rollback Segment

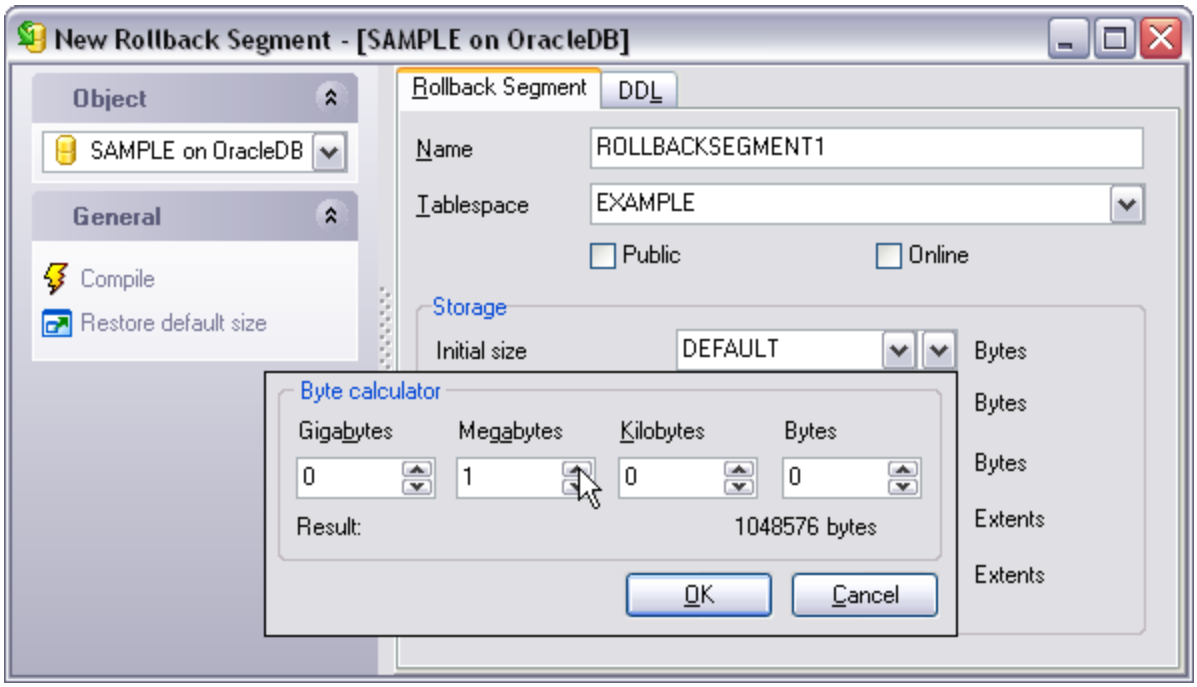
Name
Specify the name of the rollback segment to be created.

Tablespace
Identify the tablespace in which the rollback segment is created.

Public
Enable the option to indicate that the rollback segment is public and is available to any instance.

Online
Check the option to bring the rollback segment online, making it available for transactions by your instance.

Storage
The **Storage** group lets you specify storage characteristics for the rollback segment. For more information see Storage attributes.



5.4.10 Redo Log Groups

Use **Redo Log Group Editor** to add one or more redo log file groups to the specified thread or instance, making them available to the instance to which the thread is assigned.

Create redo log group

To create a new redo log group:

- Select the **Database | New Object...** menu item.
- Select **Redo Log Group** in the New Object dialog.
- Edit redo log group definition within the Redo Log Group Editor.

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Hint: To create new redo log group you can also right-click the **Redo Log Groups** node of the explorer tree and select the **New Redo Log Group...** item from the popup menu.

To create a new redo log group with the same properties as one of the existing redo log groups has:

- Select the **Database | Duplicate Object...** menu item.
- Follow the instructions of the Duplicate Object Wizard.

Edit redo log group

To edit the existing redo log group:

- Select the redo log group for editing in the explorer tree (type the first letters of the redo log group name for quick search).
- Right-click and select the **Edit Redo Log Group <Redo Log Group_Name>** item from the popup menu or simply double-click the redo log group.
- Edit redo log group definition and data on the appropriate tabs of the Redo Log Group Editor.

Drop redo log group

To drop a redo log group:

- Select the redo log group to drop in the explorer tree.
- Right-click and select the **Drop Redo Log Group <Redo Log Group_Name>** item from the popup menu.
- Confirm dropping in the dialog window.

5.4.10.1 Redo Log Group Editor

The **Redo Log Group Editor** allows you to define redo log group basic properties. It opens when you create a new redo log group or edit the existing one (see Create Redo Log Group and Edit Redo Log Group for details).

- Using navigation bar
- Editing redo log group definition
- Editing object description
- Viewing DDL definition
- Browsing object dependencies

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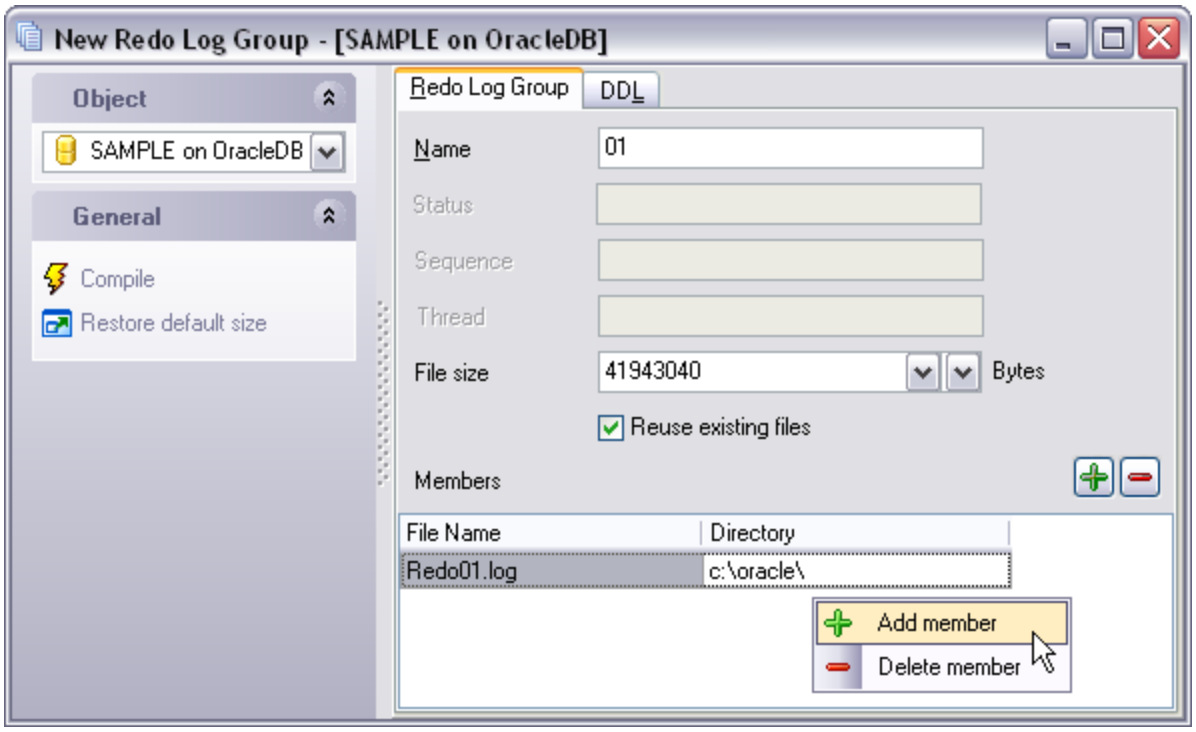

5.4.10.1.1 Using navigation bar

The navigation bar on the left allows you to:

Object bar:
- Select a database and an object for editing within the current window.

General bar:
- Compile the current object definition
- Print metadata of the current object
- View Dependency Tree for the object
- Refresh the content of the active tab
- Bring the window to its default size

The next bar displays various actions according to the current page of **Redo Log Group Editor**.

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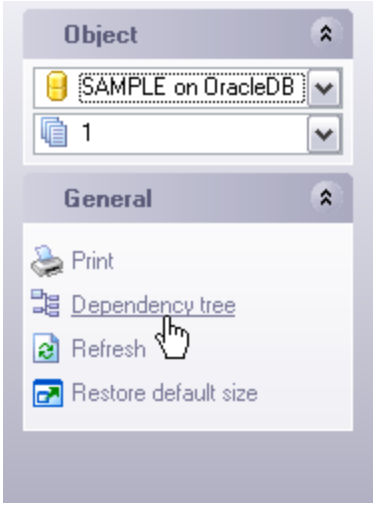

5.4.10.1.2 Editing Redo Log Group

Adding a new redo log group to your database:

Name
The group number uniquely identifies the redo log group. The the default value is generated automatically. You can enter a different group number in this field, if you desire.

Status
Status of the redo log group: Current, Active, or Inactive.

Sequence
Sequence number of the redo log group.

File size
Size of the redo log file.

Reuse existing files
Allows Oracle to reuse existing file.

Adding new members to an existing group:

Members
List of members to be included in the redo log group.

Use context menu to append/delete a member or press the green plus/red minus buttons.

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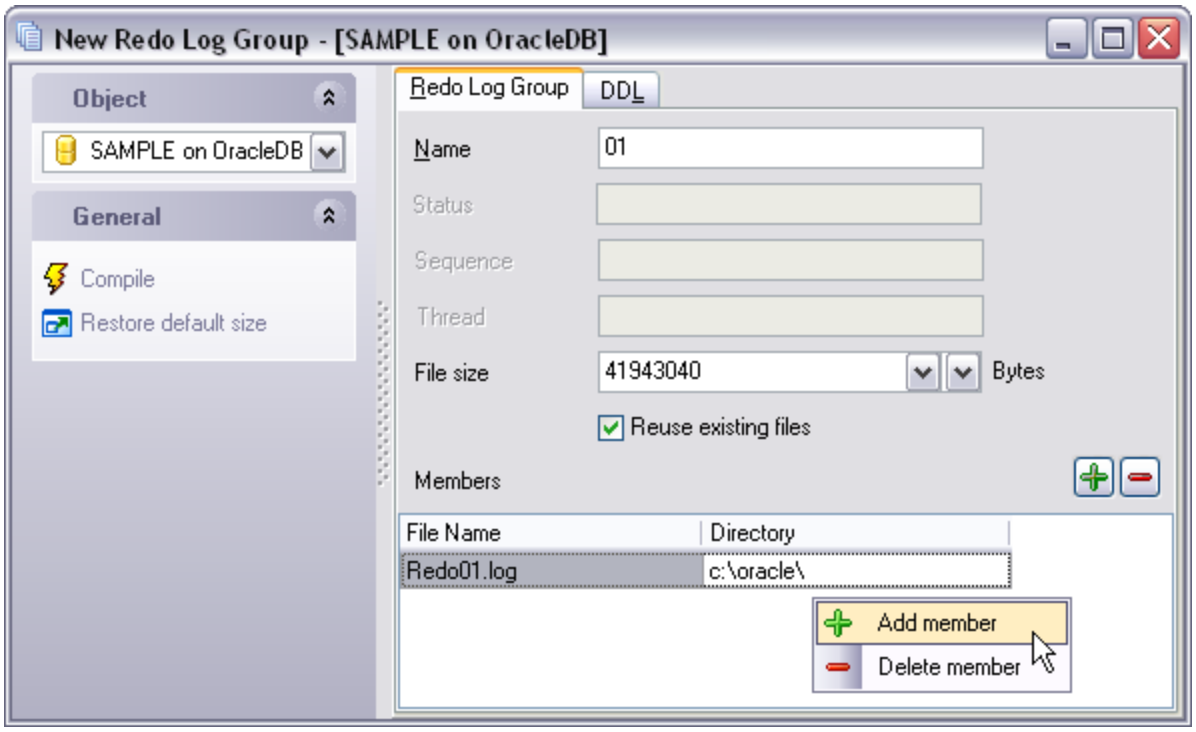

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Part

6 Queries

SQL Manager 2007 for Oracle provides two powerful tools for working with the SQL queries: SQL Editor for editing the query text directly and Visual Query Builder for building queries visually.

Creating a new Query

To create a new query in SQL Editor:

- Select **Tools | New SQL Editor** menu item.
- Click **Add new query** button on the toolbar.
- Edit the query text on the **Edit** tab of the SQL Editor.

To create a new query in Query Builder:

- Select **Tools | New Query Builder** menu item.
- Build the query on the **Builder** tab of Visual Query Builder.

Editing Query

To open a query in SQL Editor:

- Select **Tools | Show SQL Editor** menu item.
- Use the number buttons at the bottom of the area to find one of the previously edited queries. The last edited query is displayed automatically on opening the editor.
- To load a query from an *.sql file click **Load from file** button at the navigation bar.

To open a query in Query Builder:

- Select **Tools | Show Query Builder** menu item.
- The last edited query is displayed on the **Builder** tab.
- To load a previously saved diagram click **Load Diagram** item at the navigation bar.
- To load a query from an *.sql file, open the **Editor** tab and click **Load from file** button at the navigation bar.

Executing Query

To execute a query:

- Create a new query or open the existing one.
- Click **Execute query** button on the toolbar of SQL Editor or Visual Query Builder respectively.
- View/edit the returned data on the **Results** tab.

Saving Query

To save a query:

- Create a new query or open the existing one.
- Click **Save to file** item at the navigation bar of SQL Editor or **Save query** item at the **Editor** tab of Visual Query Builder respectively to save the current query to *.sql file.

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- Click **Save diagram** item at the navigation bar of the **Builder** tab of Visual Query Builder to save the designed diagram.
- Click **Save All** button on SQL Editor toolbar to save all the opened queries to one file.

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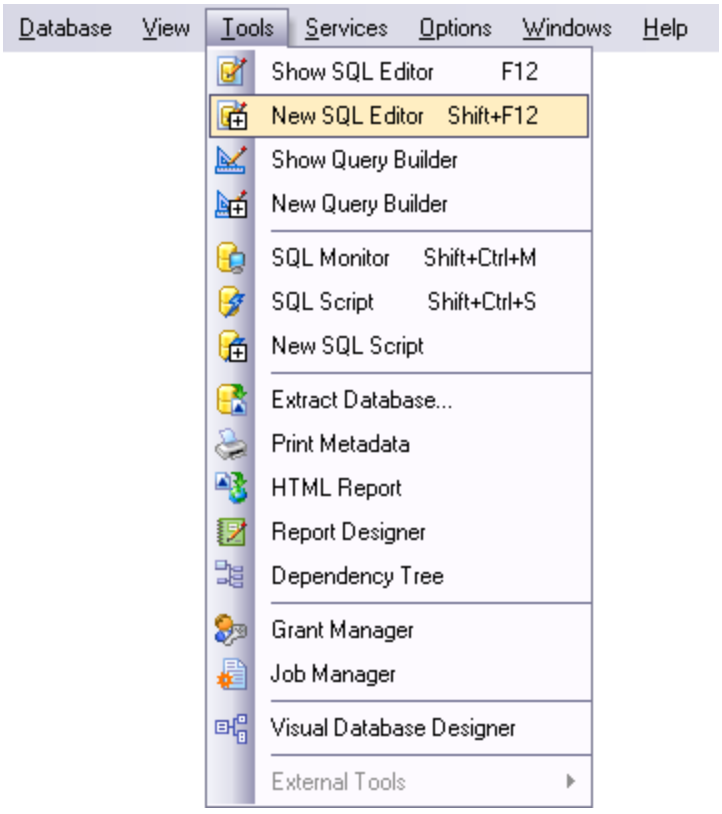
6.1 SQL Editor

SQL Editor is the basic tool of SQL Manager 2007 for Oracle for creating and executing queries. The tool allows you to create and edit the SQL text of a query, prepare and execute queries and view the results of query execution.

To open SQL Editor, select the **Tools | New SQL Editor** / **Tools | Show SQL Editor** main menu items or use the corresponding / toolbar buttons. You can also use the *Shift* + *F12* / *F12* shortcuts for the same purpose.

- Using Navigation bar
- Working with SQL Editor area
- Using the context menu
- Viewing query plan
- Using object links
- Executing queries and viewing results
- Viewing query logs
- Using PL/SQL Code Debugger



See also:

Visual Query Builder
SQL Script Editor

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6.1.1 Using Navigation bar

The **Navigation bar** of **SQL Editor** allows you to:

- select a database for the query;
- execute the current query;
- view estimated query execution plan;
- add a new query (note that the current query text will NOT be lost);
- remove the current query;
- remove all queries from the editor;
- rename the query;
- run Visual Query Builder to design the query as a diagram;
- switch the results representation mode: *on Edit tab* or *on separate tab*;
- configure SQL Editor within the Tools | SQL Editor page of the Environment Options dialog;
- activate the Find Text dialog;
- load a query from an **.sql* file using the **Open SQL File** dialog;
- save the query to an **.sql* file using the **Save as...** dialog;
- save all the queries to an **.sql* file;
- commit/rollback the transaction;
- export the returned dataset using Export Data Wizard;
- export data as SQL Script using the Export as SQL Script wizard;
- import data into the table using Import Data Wizard;
- debug the PL/SQL code using PL/SQL Debugger.

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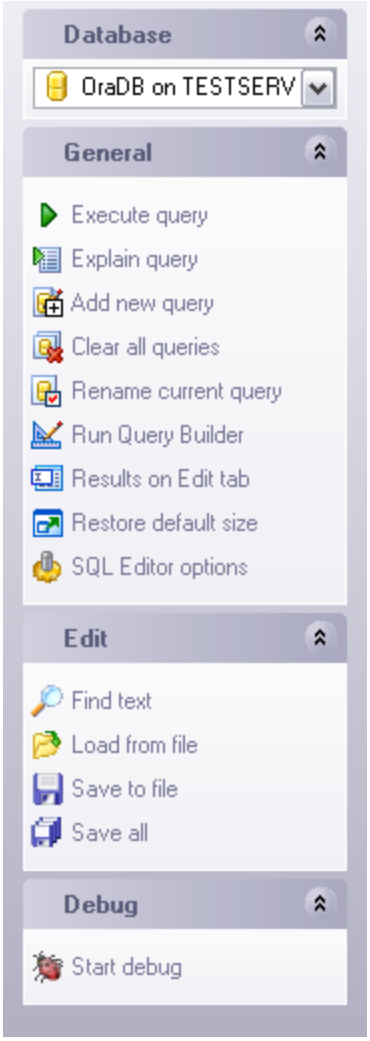

See also:

Working with SQL Editor area
Using the context menu
Viewing query plan
Using object links
Executing queries
Viewing query logs
Using PL/SQL Code Debugger

6.1.2 Working with SQL Editor area

The **Editor area** of SQL Editor is available within the **Edit** tab and is provided for working with SQL queries in text mode.

For your convenience the **syntax highlight**, **code completion** and a number of other

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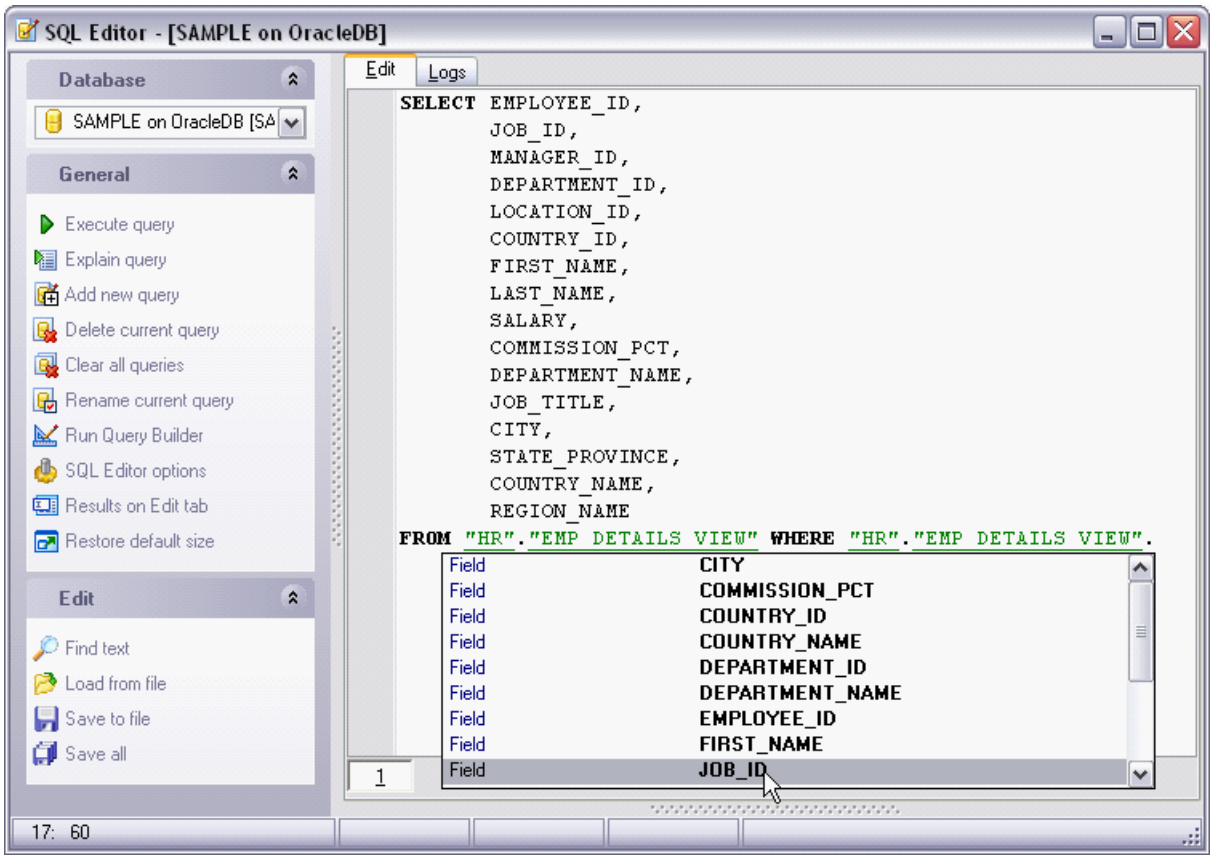
features for efficient SQL editing are implemented. If necessary, you can enable/disable or customize most of SQL Editor features using the Editor Options dialog.

The example of code completion is illustrated in the picture below. You can set the delay within the Quick code section of the Editor Options dialog or activate the completion list manually by pressing the *Ctrl+Space* shortcut.



Hint: To paste input parameters of a procedure quickly, use the *Ctrl+Shift+P* shortcut after the procedure name.

If necessary, you can **print** the SQL text of your query using the corresponding item of the context menu.

See also:

Using Navigation bar
Using the context menu
Viewing query plan
Using object links
Executing queries
Viewing query logs

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Using PL/SQL Code Debugger

6.1.3 Using the context menu

The **context menu** of SQL Editor area contains execution commands, most of the standard text-processing functions (*Cut*, *Copy*, *Paste*, *Select All*) and functions for working with the query as a whole, e.g. you can *move the cursor to a particular line*, *change the case* of selected text, view the query *properties* or *print* the text of the query. Each of these operations can be also performed with the corresponding hot keys used.

Implementation of the Find Text and the Replace Text dialogs contributes to more efficient work with the SQL code.

Find the complete list of **SQL Editor** context menu items below. The context menu allows you to:

- execute the query/selected text/text under cursor, and reset execution point (if necessary);
- manage markers: *Drop Marker*, *Collect Marker*, *Swap Marker*;
- toggle bookmarks allowing you to navigate through the query text and jump to a line with a particular number;
- perform editing operations: *Undo/Redo*, *Cut*, *Copy*, *Paste*, *Select all*;
- perform search and replace operations;
- change case of the selected text;
- save/load a query to/from an external **.sql* file;
- perform preview/print operations;
- format the selected code using *SQL Formatter* to make the code easier to read;
- toggle a comment for a code fragment;
- open the Editor Options dialog.

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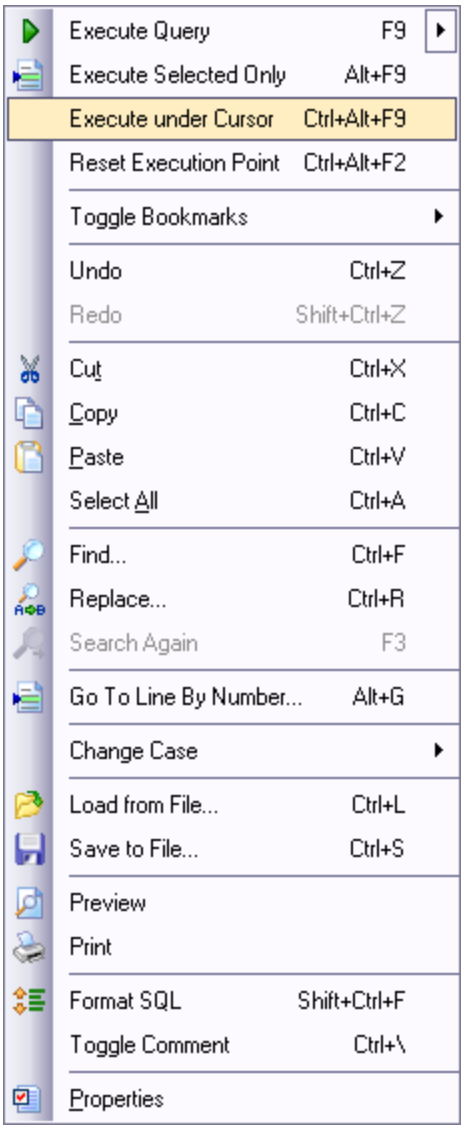

See also:

Using Navigation bar
Working with SQL Editor area
Viewing query plan
Using object links
Executing queries
Viewing query logs
Using PL/SQL Code Debugger

6.1.4 Viewing query plan

Using SQL Manager 2007 for Oracle, you can view **the plan** for each of the queries created and executed in the application. The query plan is available within the

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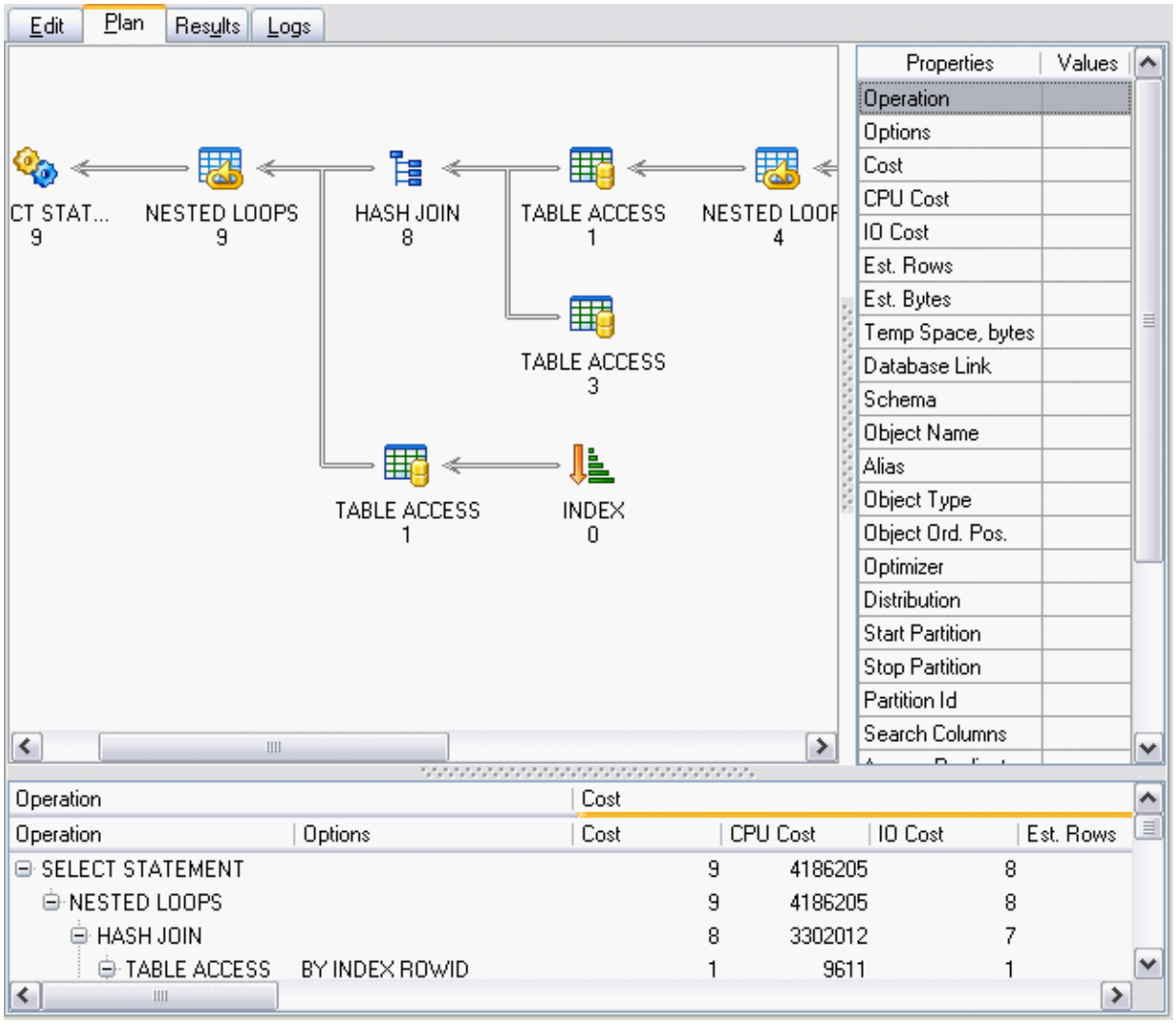
corresponding **Plan** tab.

To view the **Plan** of a query, open the query in **SQL Editor** and use the **Explain query** item of the Navigation bar.

The **Plan** tab allows you to view the sequence of actions performed by the database server in the process of the query execution, and the amount of system resources used for the query execution. Note that this tab only appears after you have executed the query.



If necessary, you can specify that the **Plan** tab appears automatically upon query execution in SQL Editor: select the **Explain query** option available within the Tools | SQL Editor section of the Environment Options dialog.

See also:

Using Navigation bar

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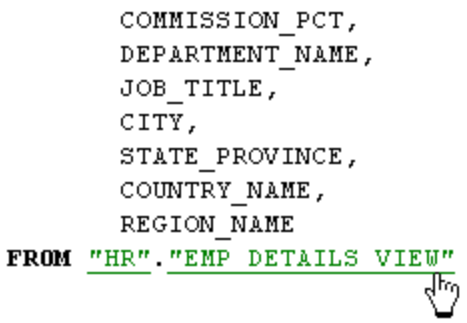
Working with SQL Editor area
Using the context menu
Using object links
Executing queries
Viewing query logs
Using PL/SQL Code Debugger

6.1.5 Using object links

Objects that exist in the database are highlighted in the text as hyperlinks. You can open an object in the appropriate editor by clicking the object name in the text with the *Ctrl* key pressed.



Please note that you can change the way highlighted objects look in the editor: use the Color section of the Editor Options dialog.

See also:
Using Navigation bar
Working with SQL Editor area
Using the context menu
Viewing query plan
Executing queries
Viewing query logs
Using PL/SQL Code Debugger

6.1.6 Executing queries and viewing results

When all the query parameters are set, you can immediately **execute the query** in **SQL Editor**.

To execute a query, click the **Execute query** item of the Navigation bar. You can also use the context menu or *F9* hot key for the same purpose.

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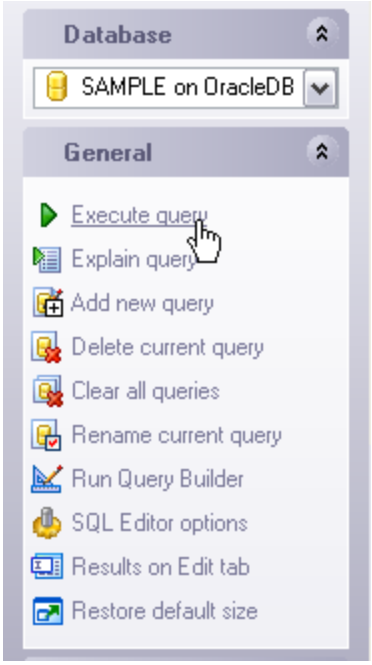
If the SQL syntax is correct, the query is executed and, in case the query statement is supposed to return data (e.g. as SELECT statement), the returned dataset appears within the **Results** tab. The position of the tab depends on the **Results on Edit tab / Results on separate tab** selection in the Navigation bar.
If SQL syntax of the query contains any errors, the query execution is stopped and the corresponding error message is displayed in the status bar area at the bottom of the editor window.



By default, data returned by a query are displayed as a grid (see Data View for details). The **context menu** of the grid allows you to Export Data, Export as SQL Script.

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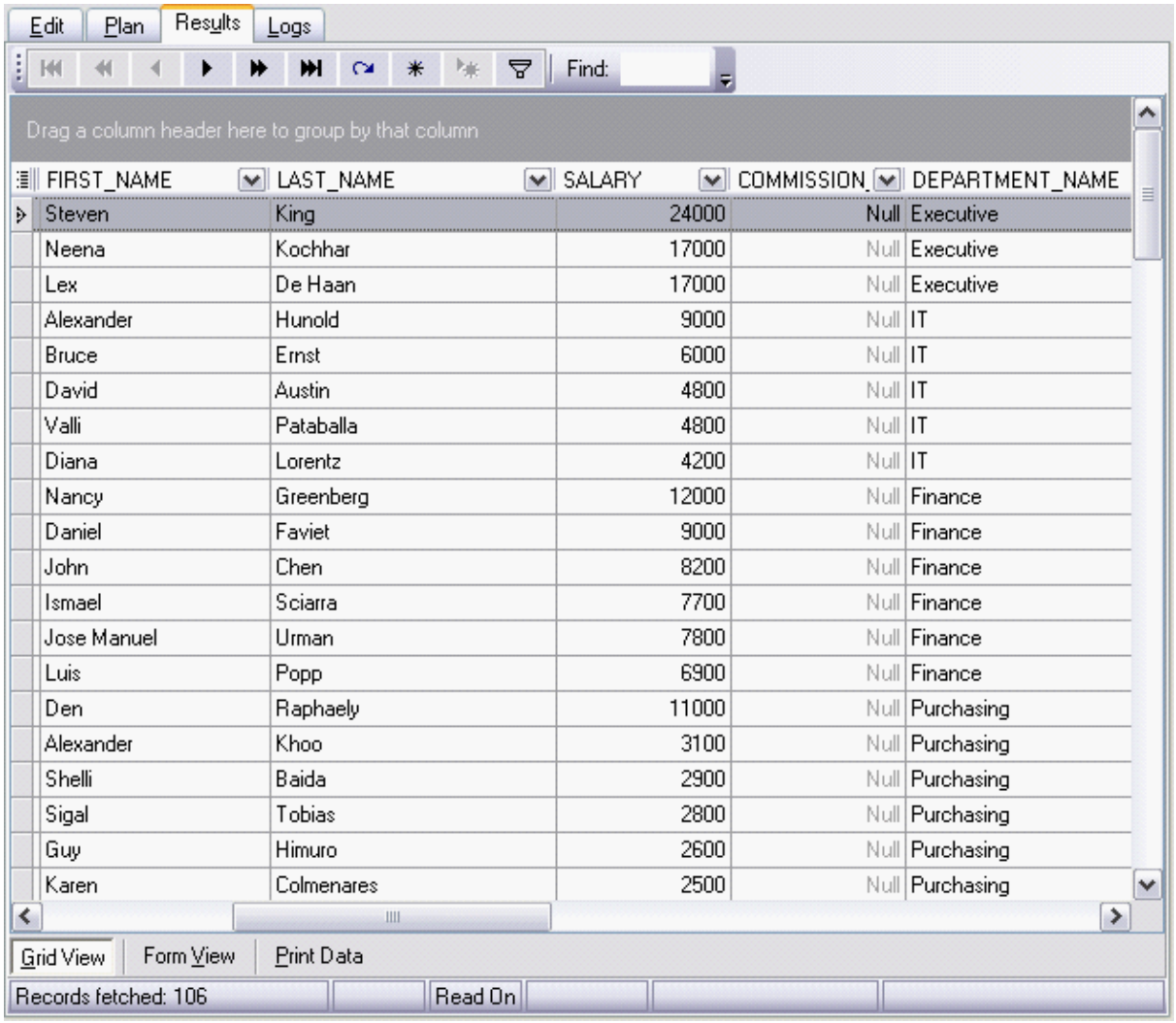

See also:

Using Navigation bar
Working with SQL Editor area
Using the context menu
Viewing query plan
Using object links
Viewing query logs
Using PL/SQL Code Debugger

6.1.7 Viewing query logs

This tab allows you to view the query **log**. The log is available within the **Logs** tab of **SQL Editor**.

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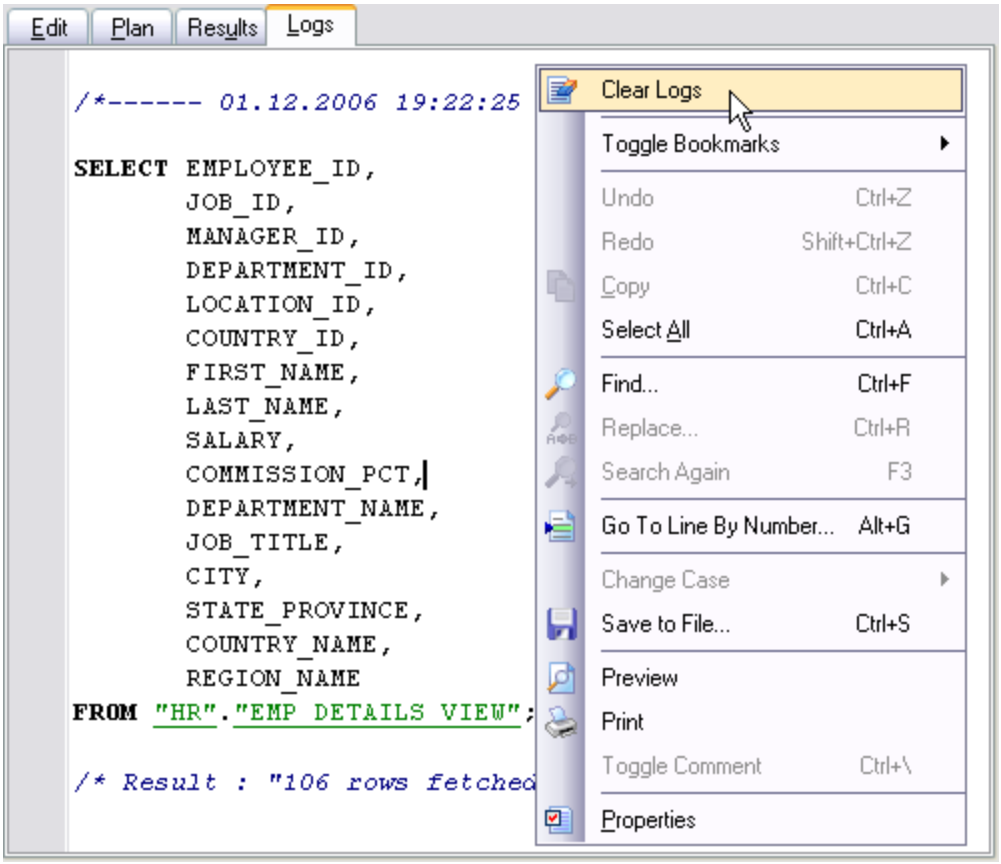
Using this tab you can view the text of each query, information on the date and time of the query execution, the number of rows fetched, etc. With the help of the context menu the log can be printed, saved to file or cleared. You can also use a number of SQL Editor context menu generic functions.



See also:

Using Navigation bar
Working with SQL Editor area
Using the context menu
Viewing query plan
Using object links
Executing queries
Using PL/SQL Code Debugger

6.1.8 Using PL/SQL Code Debugger

PL/SQL Code Debugger is a new feature of SQL Manager 2007 for Oracle. This tool is provided for step-by-step code debugging: anonymous blocks, procedures, functions, packages, triggers, object types. Much of the power of the debugger comes from toggling breakpoints, getting variables' values, and fetching call stacks.

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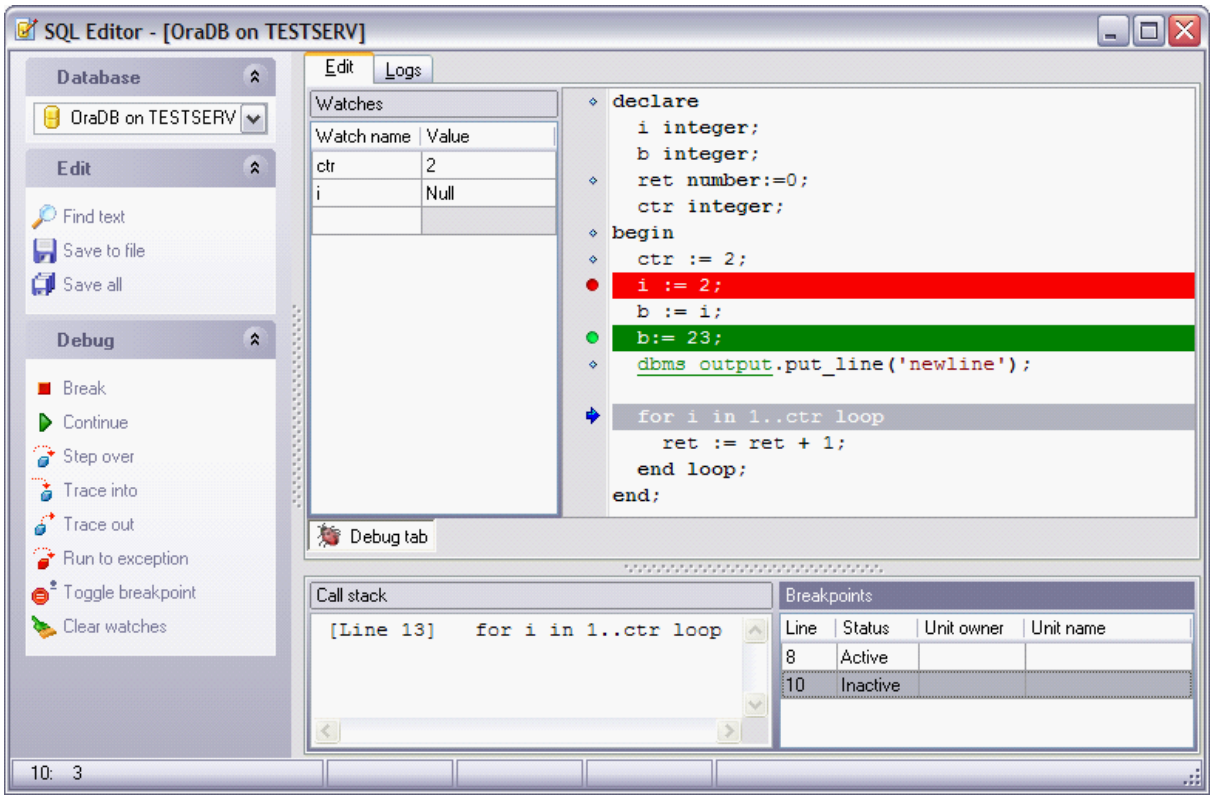
The **Edit** tab of the **PL/SQL Code Debugger** window contains the following areas:

- the *Debug* pane of the Navigation bar;
- the *Watches* list;
- the *PL/SQL code* area;
- the *Call stack* box;
- the *Breakpoints* list.

Note: All areas within the **Edit** tab of the **PL/SQL Code Debugger** window are dockable, i.e. you can drag an area to any location within the parent form.

The **Logs** tab of the **PL/SQL Code Debugger** window displays the debug log.



The **Debug** pane of the **Navigation bar** provides several debug commands:
Start: this command is used to start the debugging session;
Break: this command stops the current debugging session;
Continue: use this command to continue execution up to the next breakpoint;
Step over: traces the code disregarding the object body (procedure, function);
Trace into: traces the code using the object body (procedure, function);
Trace out: traces the code up to the point of leaving the object body (procedure, function);
Run to exception: traces the code up to the nearest exception point;
Toggle breakpoint: use this command to add/remove breakpoints;
Clear watches: allows you to clear the variables added to the **Watches** list.

The **Watches** list allows you to watch the variables that have been declared in the code,

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and the value of each variable. The following attributes are listed for each watched variable:
Watch name
Value

The **PL/SQL code** area presents the statement being debugged. All points that have been set within the code are marked with corresponding signs. Active breakpoints are highlighted red, and inactive breakpoints are highlighted green.

The **Call stack** box lists the call stacks, if applicable.

The **Breakpoints** list displays the currently toggled breakpoints. The following attributes are listed for each breakpoint:
Line
Status
Unit owner
Unit name

See also:

Using Navigation bar
Working with SQL Editor area
Using the context menu
Viewing query plan
Using object links
Executing queries
Viewing query logs

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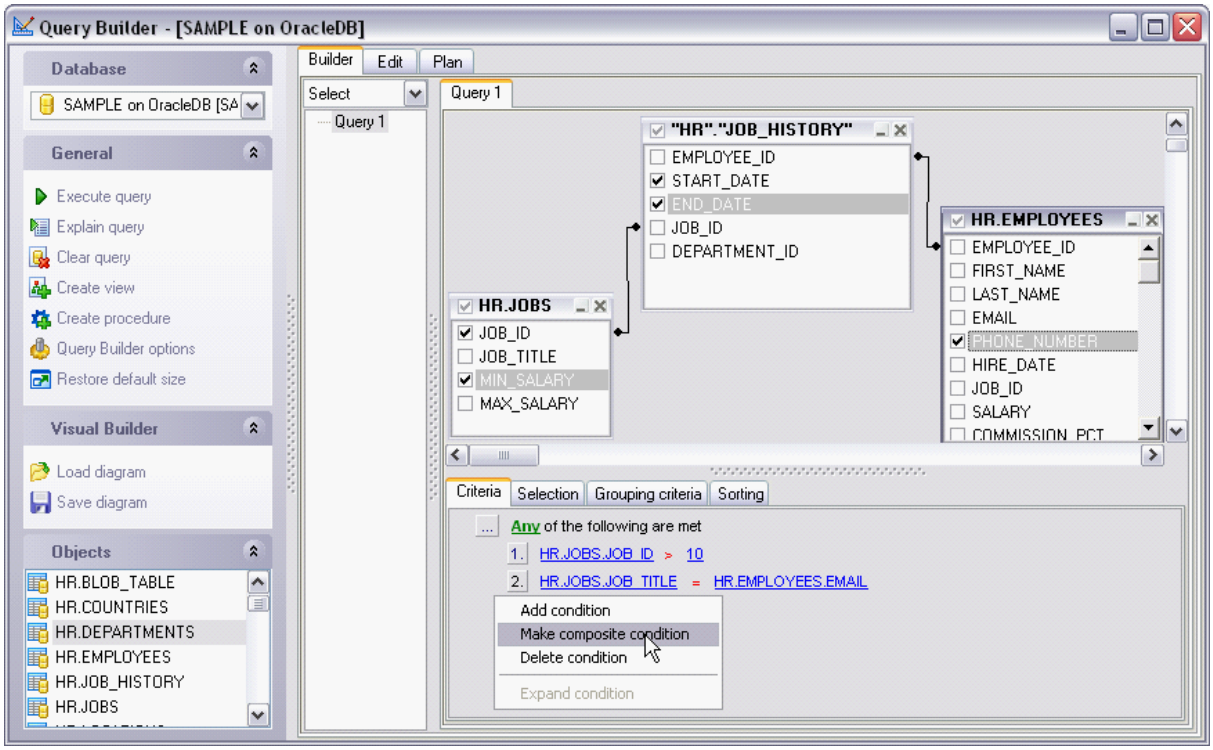
6.2 Visual Query Builder

Visual Query Builder is implemented in SQL Manager 2007 for Oracle for building queries visually. The tool allows you to create and edit queries without deep knowledge of SQL. You can also prepare and execute queries, and view the results of their execution.

To open Visual Query Builder, select the **Tools | New Query Builder** / **Tools | Show Query Builder** main menu items or use the corresponding / toolbar buttons.

- Using navigation bar
- Working with diagram area
- Joining two database objects by fields
- Setting the selection criteria
- Setting output fields for selection
- Setting the grouping criteria
- Setting parameters of sorting
- Working with editor area
- Executing query and viewing results



See also:

SQL Editor
Visual Database Designer

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6.2.1 Using navigation bar

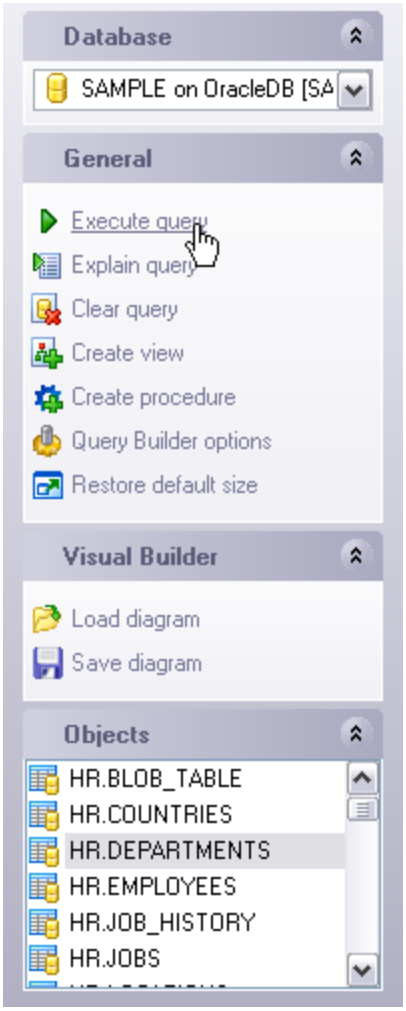
The navigation bar at the left allows you to:

- Select a database for query.
- Execute the current query.
- Clear the current query.
- Create view on the base of current table(s).
- Configure **Visual Query Builder**.
- Bring the window to its default size.

The **Visual Builder** bar allows you to load a query/diagram from file and to save current query/diagram to a file.

The **Data Management** bar allows you to:
- Export data into most popular data formats.
- Export data as SQL script.

The **Objects** bar allows you to add tables and views to the diagram.



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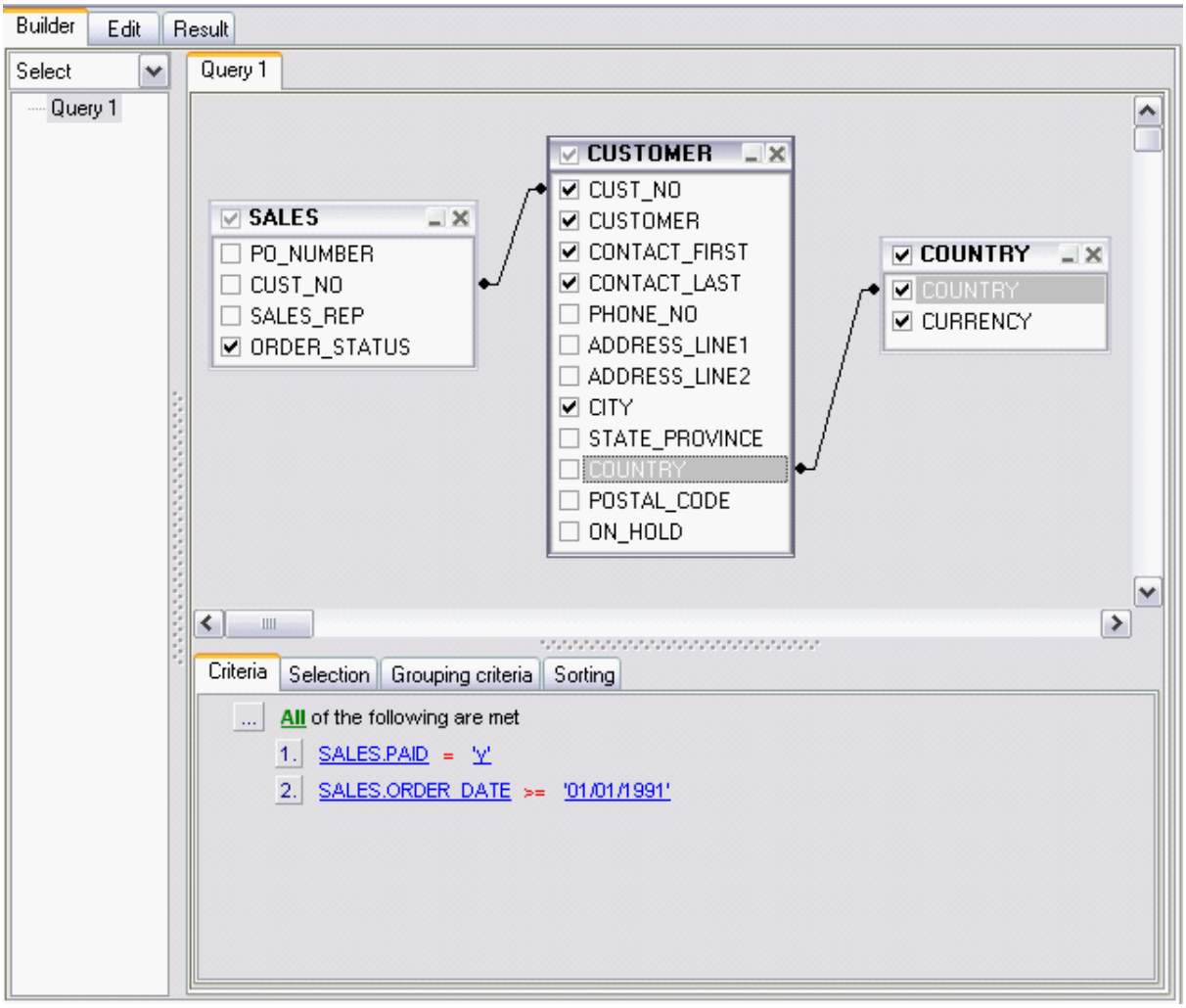
6.2.2 Working with diagram area

The main area of the **Visual Query Builder** is the **Builder** area. Here you can build your query by placing the database tables on the area, selecting the required data and setting links between objects.

To add a table to the query, simply drag it from Database Explorer tree of the main window to the Builder area. To include a table field in the query, click at the left of the field name in the list or double-click it to check the box next to the field name. To include all the fields, click at the left of the table caption. If you don't check any fields, the SQL statement is generated as SELECT * FROM <Table_Name>, i.e. all the fields are selected. To remove the fields from the query, uncheck the corresponding fields; to remove the object, close it by clicking the cross button at the object caption, or select the object and press Del key. To edit the object alias, double-click the object caption.



6.2.3 Joining two objects

To associate database objects by two fields, just drag one field from the object list to another. This will set a link between these objects by the selected fields. After you finish dragging, a line will appear between the linked fields. You can view and edit the properties of object association. To do that, aim cursor at the link line. A hint containing the

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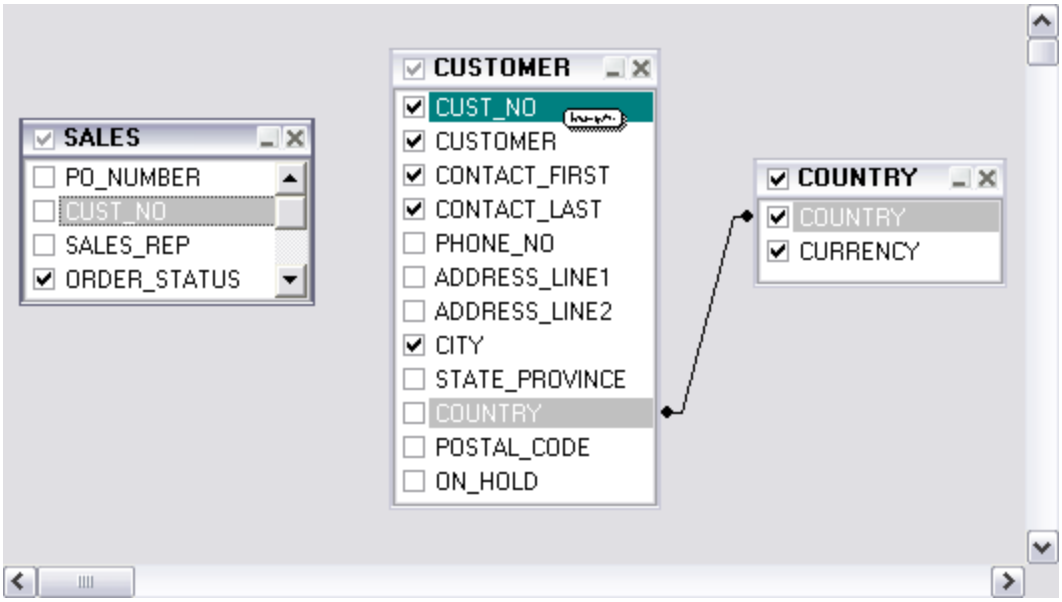
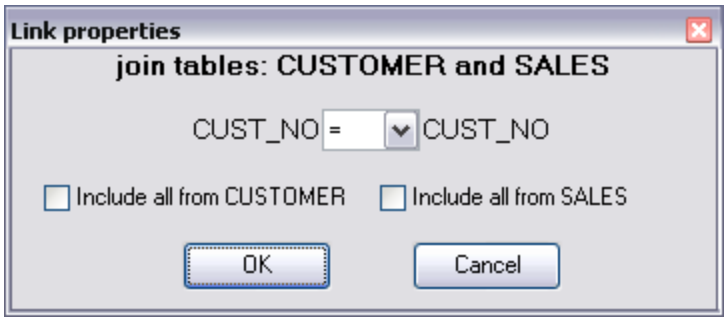
association condition will appear.



To edit the properties, double click the line or right-click and choose the **Property** item from the popup menu. A dialog window will appear, where you can change the association condition by choosing it from the list (=, >, <, >=, <=, <>).



Also you can check or uncheck the Include all option for each object, included in the association. Click **OK** to confirm the changes you have made.

To remove a link between objects, right-click the link line and select the **Delete Link** item from the popup menu.

To delete all the links of some object, click button '-' next to the object alias. To insert a point to the link line, right-click on the line and choose **Insert Point** item from the popup menu. A new point will appear, using which you can move the link line.

6.2.4 Setting criteria

Use the **Criteria** page to set the selection conditions.

To add a condition, click the button at the left and select **Add condition** item from the popup menu.

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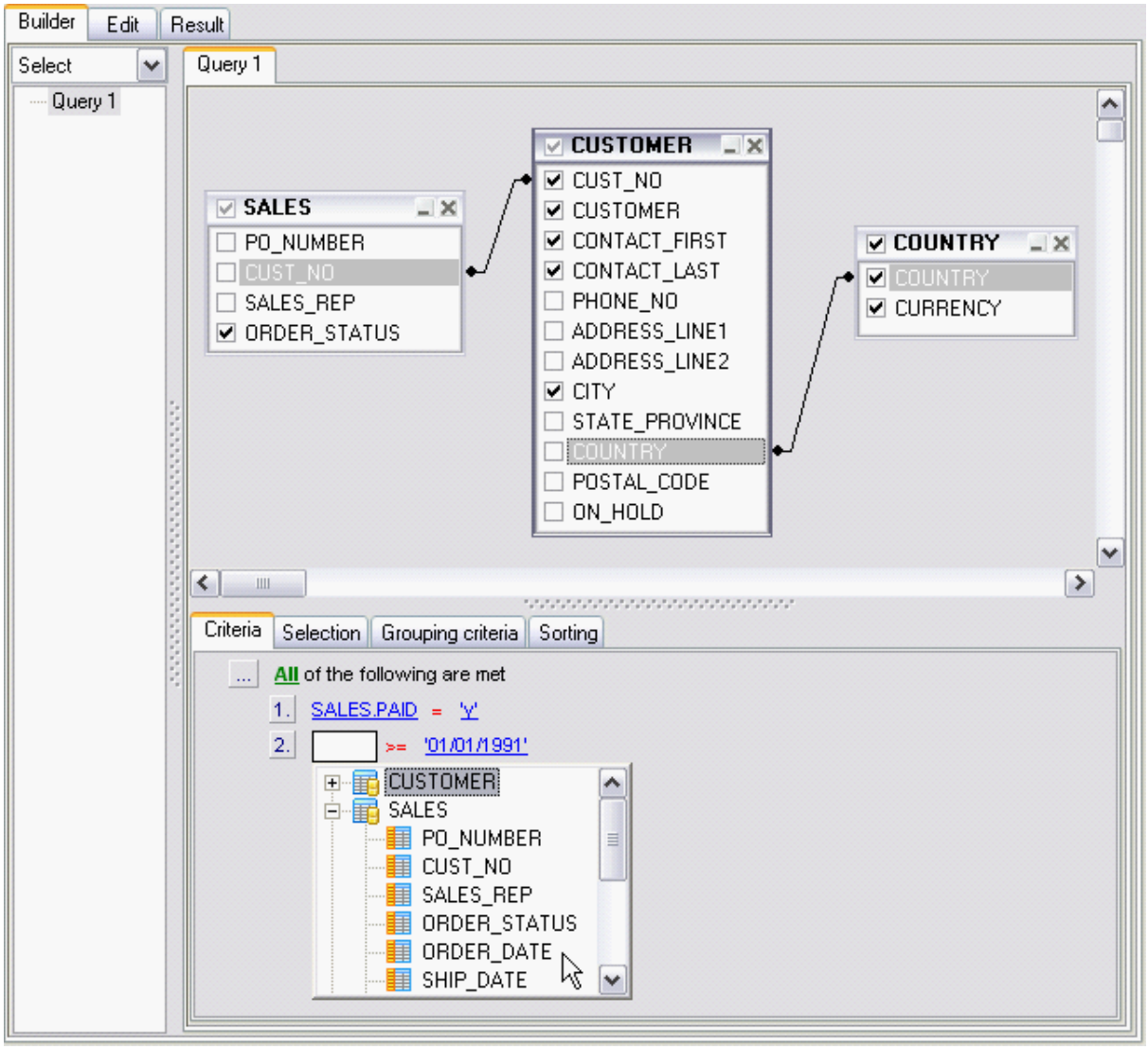
Edit the condition by clicking its parts and setting their values. Clicking the button at the left of the condition string activates the popup menu, which allows you to add a new condition of the same enclosure level, add a new enclosure level, delete the current condition, open or close the condition, if it is composite.

A simple condition string contains three fields: an argument, a condition and a second argument (if required for the condition). Clicking each field allows you to set its value. Clicking the argument field allows editing it as a text field. You can set a table name or a definite value in this field. Right-clicking the field in the edit mode activates the popup menu, which contains the **Insert Field** function (also called by Shift+Enter).

This function allows you to choose a field from the list of all the table fields, available in the query. Clicking the condition field activates the popup menu, where you can choose the condition you need. The way of proceeding the condition is set in the upper string of the area (All, Any, None, or Not all of the following are met). Click the underlined word to change it.



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6.2.5 Setting output fields

The **Selection** page displays the output fields of the query. It allows you to edit the names of the query output fields, set their displaying order and set the aggregate functions (SUM, MIN, MAX, AVG, and COUNT) for each field. To remove the field from the list, right-click the field row and choose **Delete current row** from the popup menu. To change the input query field, double click it and then type the field name on the keyboard or choose it from the dropdown list.

To change the output query field name, double click it and type the field name on the keyboard.

To set the aggregate function for the field, double click the field row in the **Aggregate** column and then type the function name on the keyboard or choose it from the dropdown list.

☑ **Select only unique records**
If you check this option the repeated records are not included into the query result (the DISTINCT word will be added to the query text).

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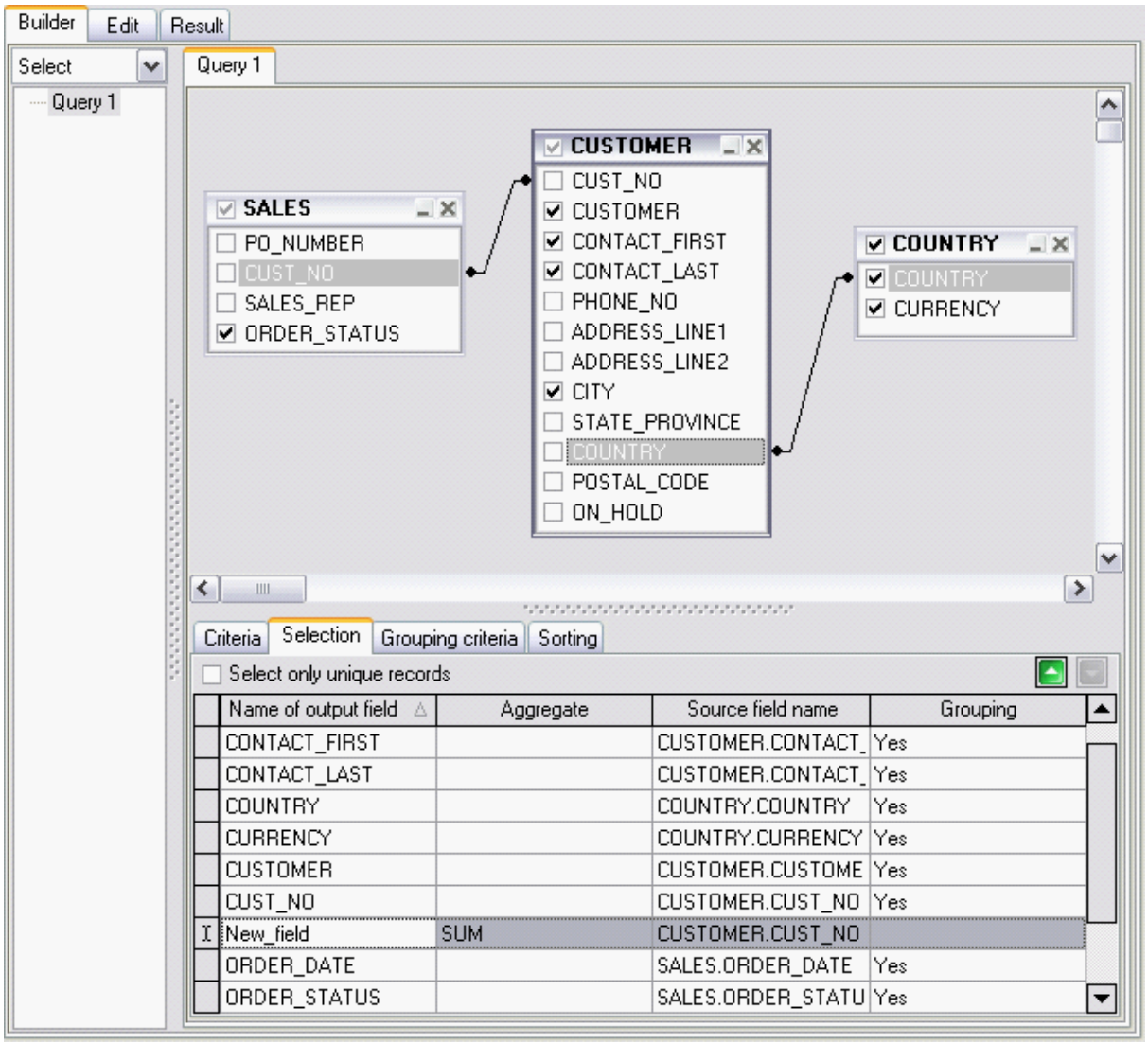

6.2.6 Setting grouping criteria

On the **Grouping Criteria** page you can set the conditions for grouping query records. They are set in the same way as the selection of criteria. These conditions will be included in HAVING statement of the generated query.

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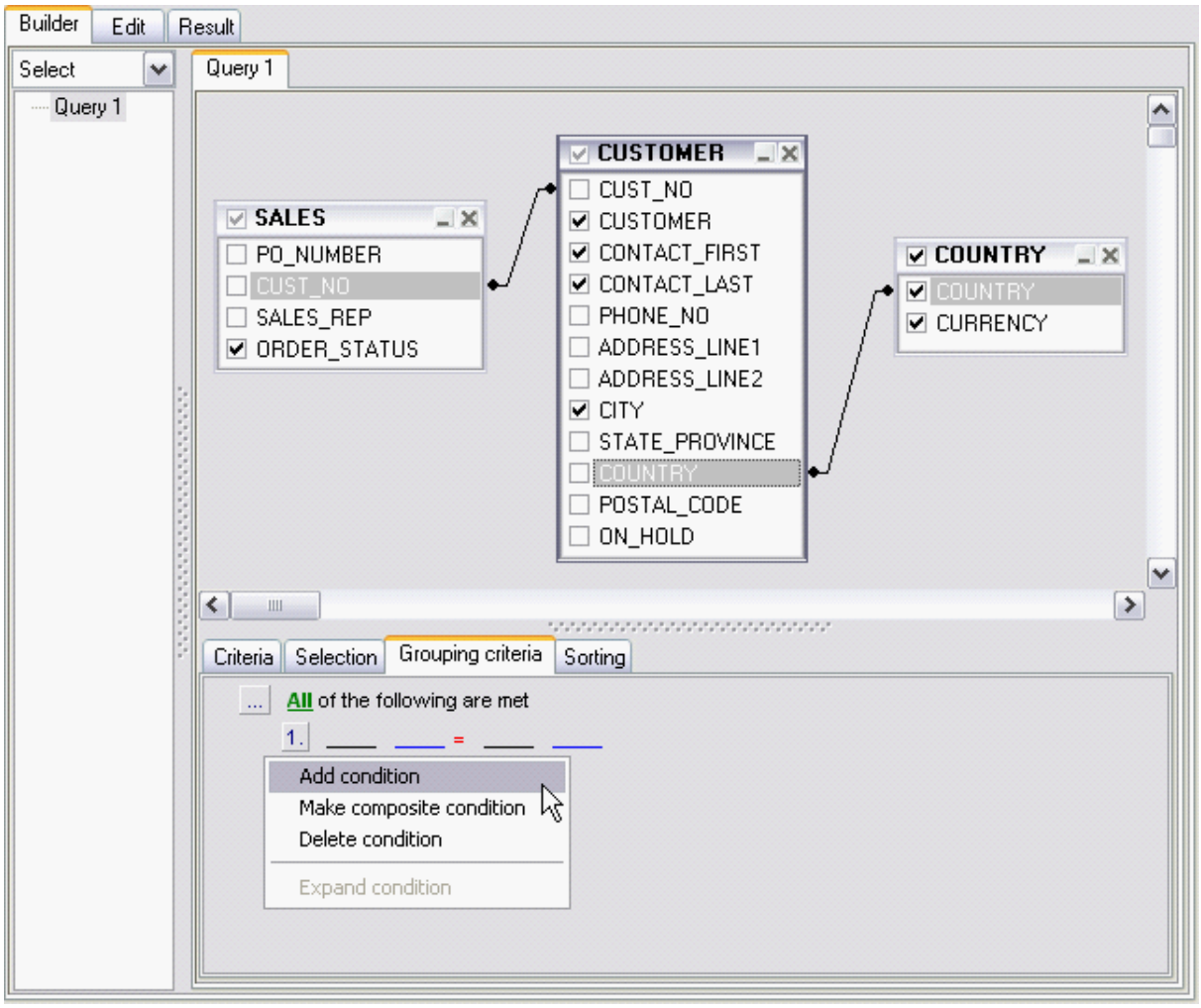

6.2.7 Setting parameters of sorting

Set the way of sorting query records on the **Sorting** page. The field list at the left represents all the output query fields; the list at the right contains fields, by which the query records will be sorted. To move the field from one list to another, drag the selected field or use the **Add** and **Remove** buttons. To change the sorting order, select a field in the right list and move it using the Up and Down buttons.

To change the sorting direction, select a field in the right list and switch the direction (Ascending, Descending) using the **A..Z/Z..A** button.

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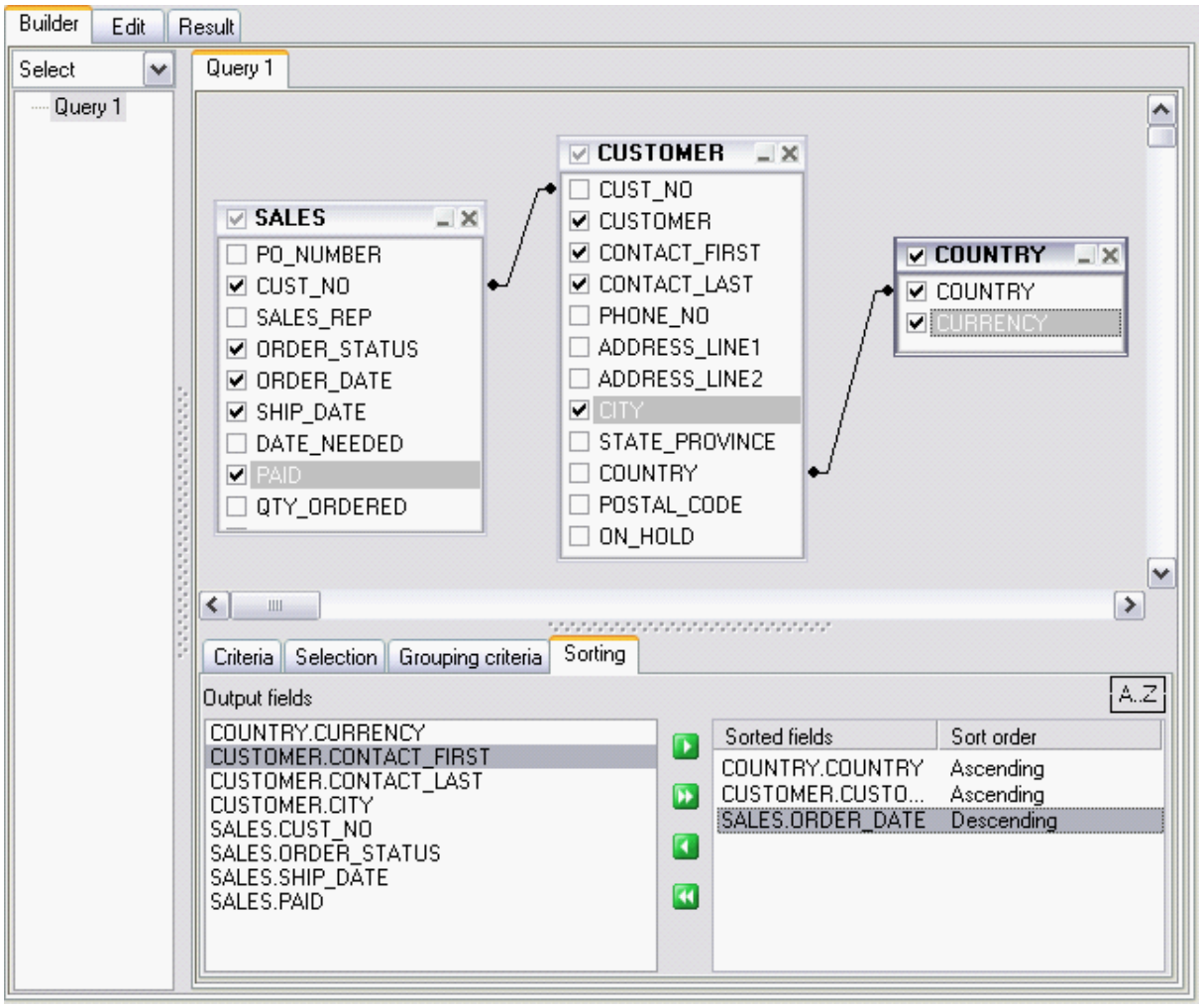

6.2.8 Working with editor area

In the **Editor** area the query text is automatically generated while you build query.

You can edit this text according to the rules of SQL, and all the changes will be displayed on the **Builder** page of **Visual Query Builder**.

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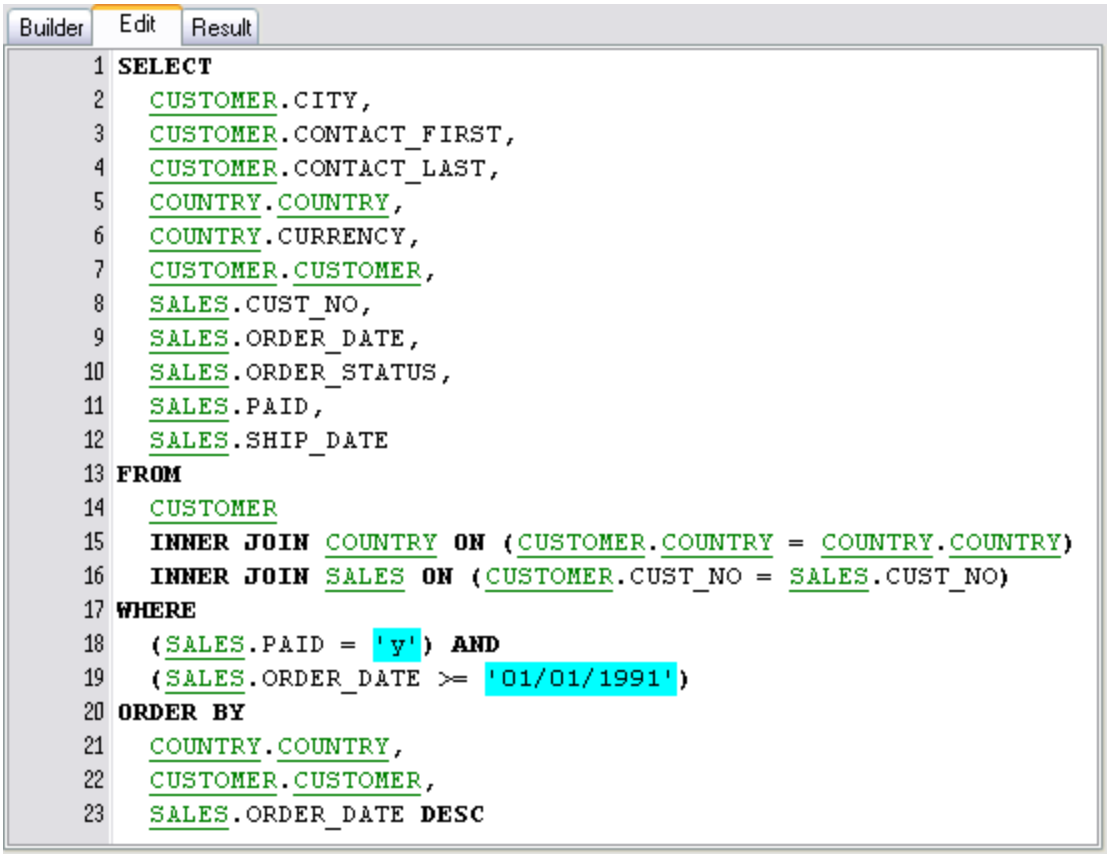

6.2.9 Executing query

To execute the query click button **Execute query** on the navigation bar. This displays the **Result** tab. This tab displays the result data, returned by the query, as a grid (see Data View for details). The popup menu of this tab and the Data Management navigation bar allow you to Export Data, Export As SQL Script and more.

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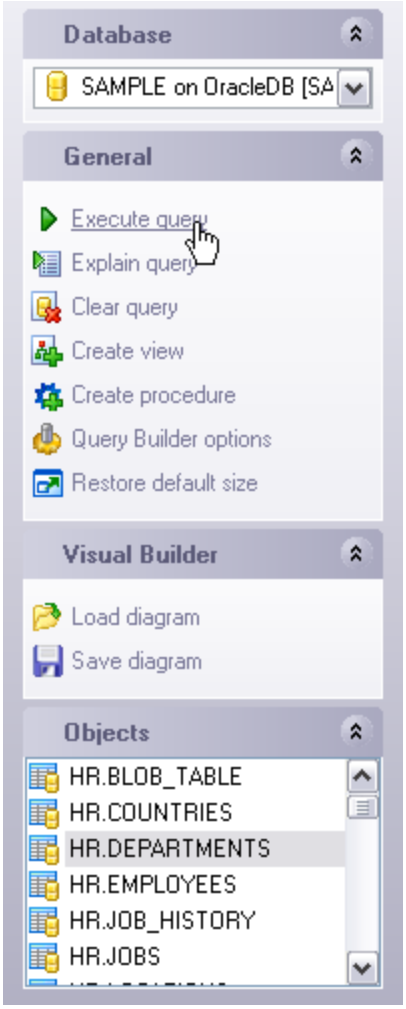

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6.3 Query parameters

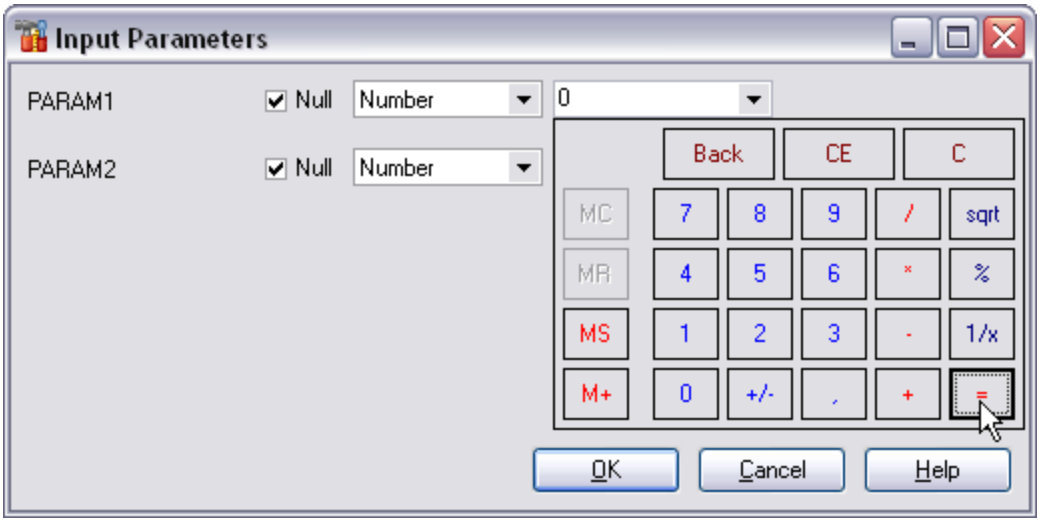
Both of SQL Editor and Visual Query Builder support using of parameters inside the query text. A parameter is a kind of variable, which value can be specified just before the query execution. In the query text the parameter should appear as an identifier with a colon (':') at its beginning, e.g.

```
:param1
```

Note: The **Allow using of parameters in query text** option should be checked at the **Options | Environment options | Tools** tab for this feature to be enabled.

6.3.1 Input parameters dialog

The **Input Parameters** dialog is used to specify the query parameters as well as values of the input parameters of the procedure or function before execution. Click **OK** button to apply the values and execute the query or click **Cancel** button to abort execution.



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Part

7 Data Management

Table data and query results are displayed on the **Data** or **Results** tab of Table Editor, SQL Editor, Visual Query Builder, etc.

The data can be displayed in three modes: **Grid View**, **Form View** and **Print Data**. See Data View to learn more about these modes.

The toolbars of these tabs as well as the popup menus (activated by right-click on the grid) provide the following functions for managing data:

- Export Data
  Exports data to various formats, including MS Excel, MS Access, RTF, HTML, PDF and more.
- Export As SQL Script
  Exports data to the SQL script as a number of INSERT statements.
- Import Data
  Imports data from MS Excel, MS Access, DBF, TXT, and CSV.
- Edit BLOB
  Allows you to view and edit the content of BLOB and TEXT fields.

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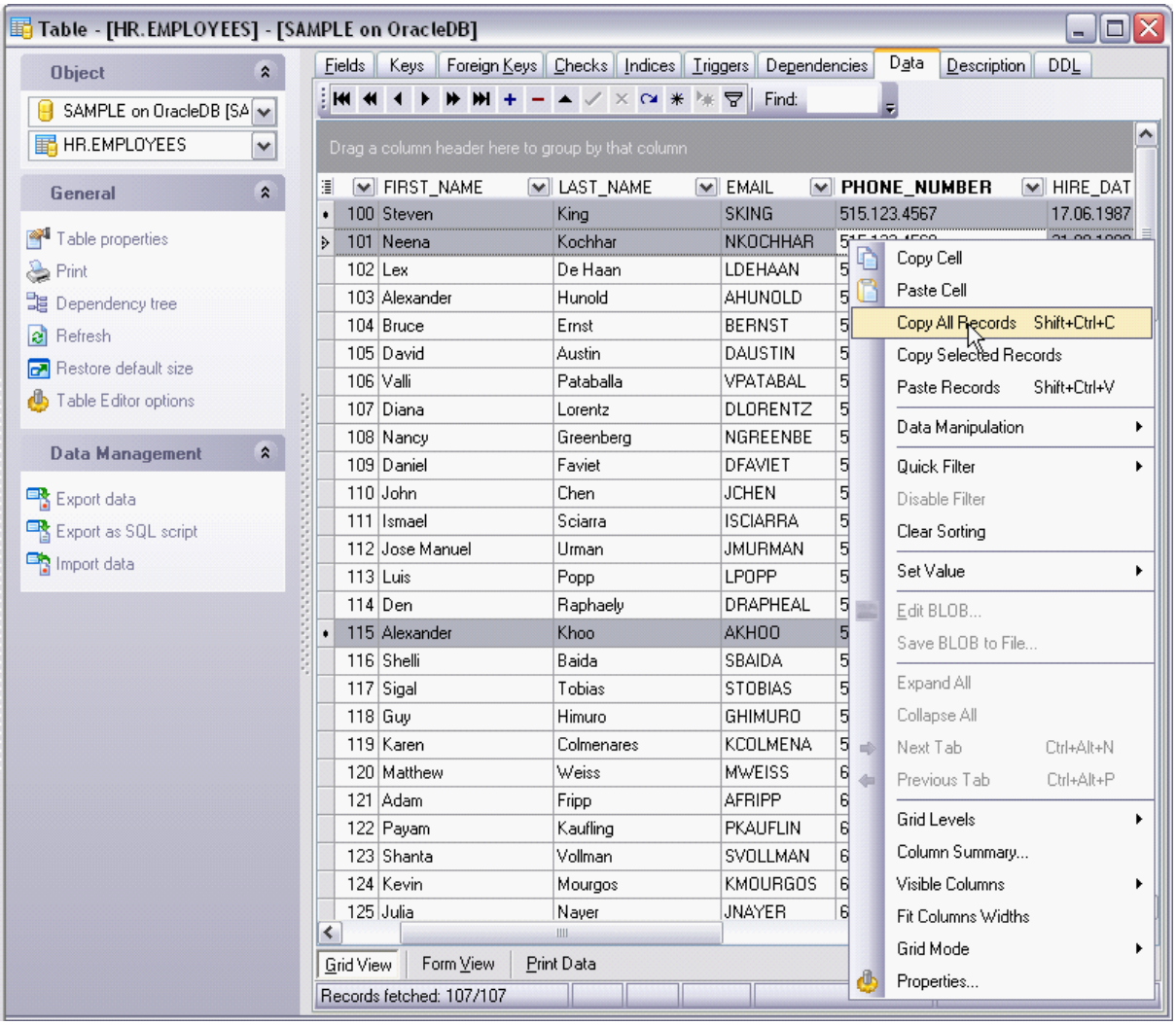
7.1 Data View

SQL Manager 2007 for Oracle provides you with powerful tools for viewing, editing and printing data from tables and queries. This topic shows how you can work with data in the simplest and the most direct way.

- Grid View
- Form View
- Print Data

See also:

Table Editor
SQL Editor
Visual Query Builder



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7.1.1 Grid View

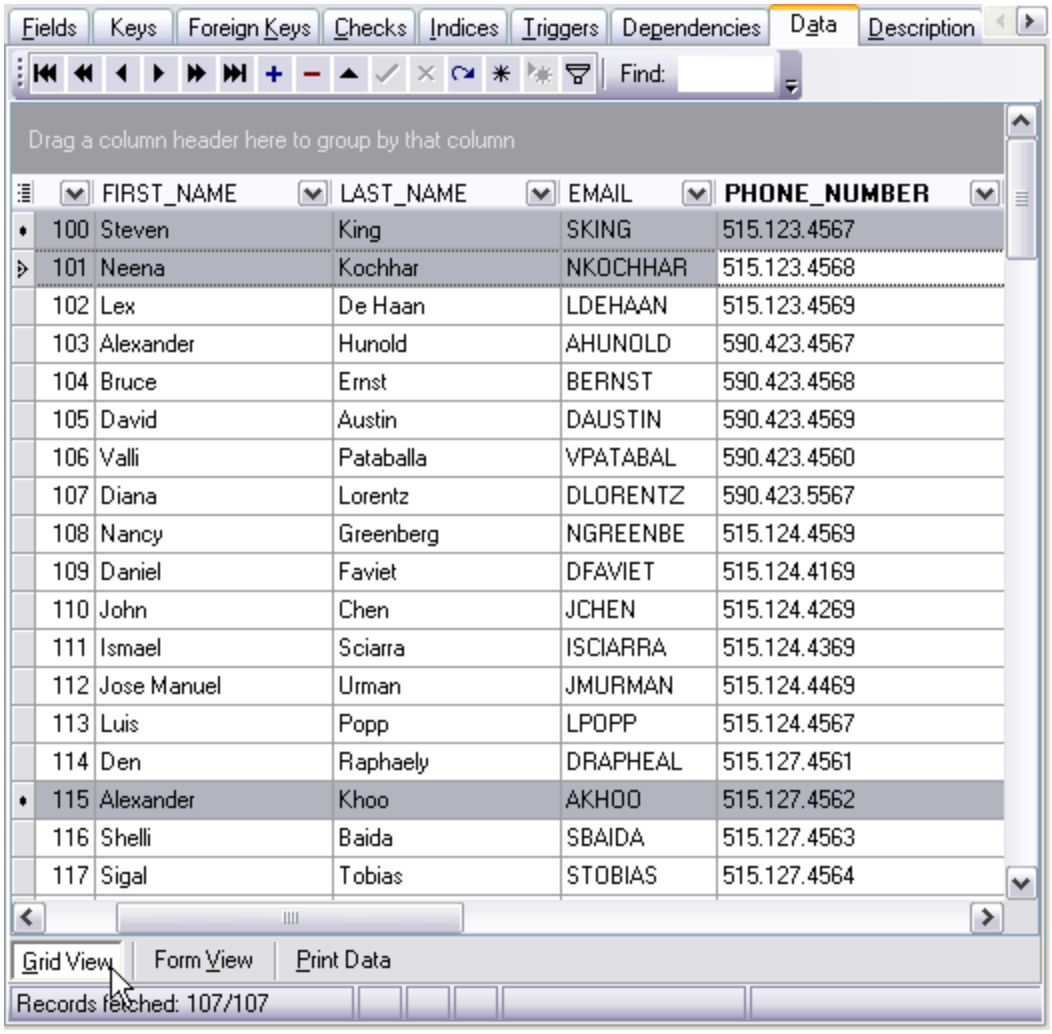
View data as a grid. The columns correspond to the fields and rows correspond to the records. Clicking the column caption sorts data by the values of this column in ascending or descending mode. The navigation bar allows you to switch the records quickly, insert, update or delete records.

The navigation bar of the parent tool as well as the grip popup menu provides you with the following data functions: Export Data, Import Data, Export As SQL Script and more.

The popup menu of the grid also provides the following additional functions: use current field value as a filter, set the field value as Null, edit BLOB (for BLOB fields; see BLOB Viewer/Editor).

Note: The status bar displays the number of records in the current data set.

- Grouping data within the grid.
- Filtering records.
- Working in multi-level mode.
- Viewing data in card view.



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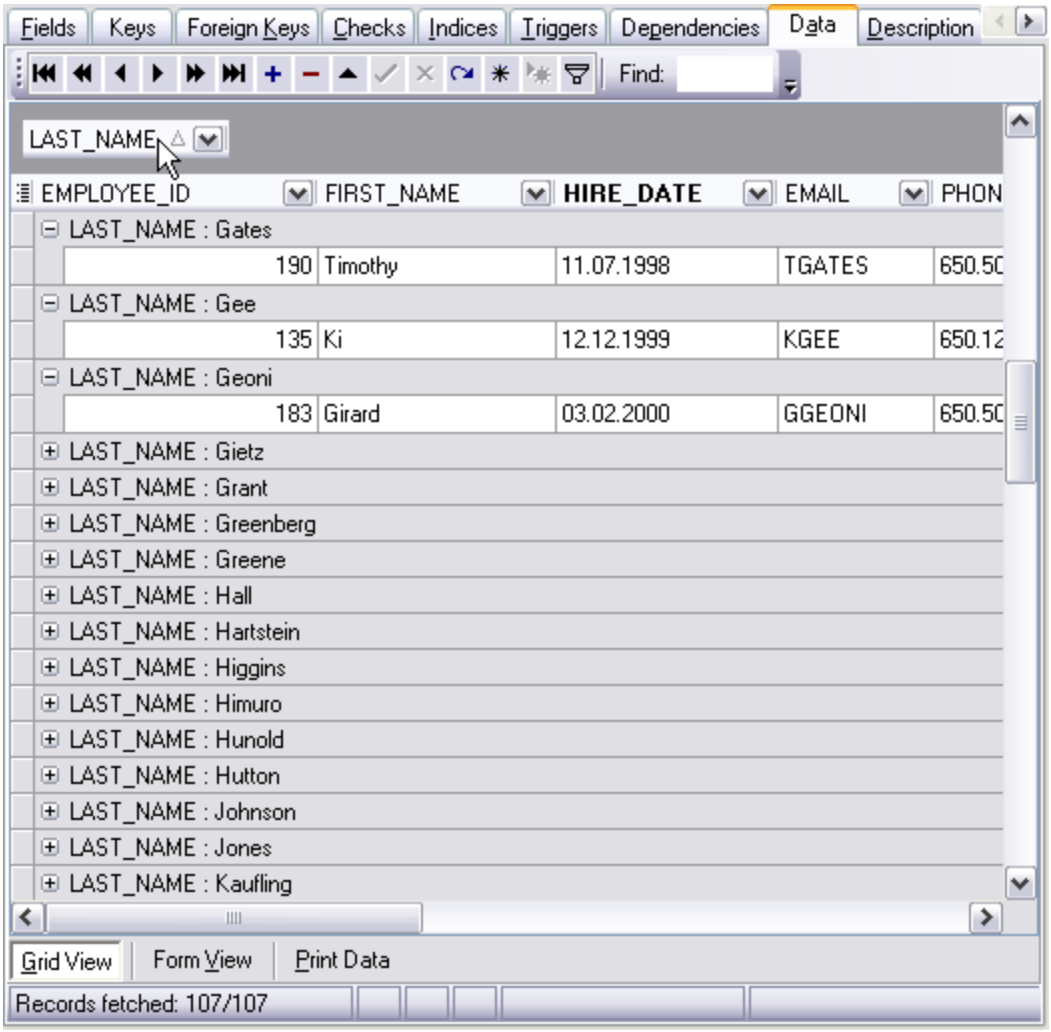
7.1.1.1 Grouping data

You can **group** grid data by any of the columns by dragging the column header to appear area. Now all the records are displayed as subnodes to the grouping row value as shown at the picture. To reverse grouping, just drag the column name from the upper area back.



7.1.1.2 Filtering records

You can filter records in the grid by one of the following methods:

- Right-click a row and select **Quick Filter** item from the popup menu to filter records by the current value of the selected column.

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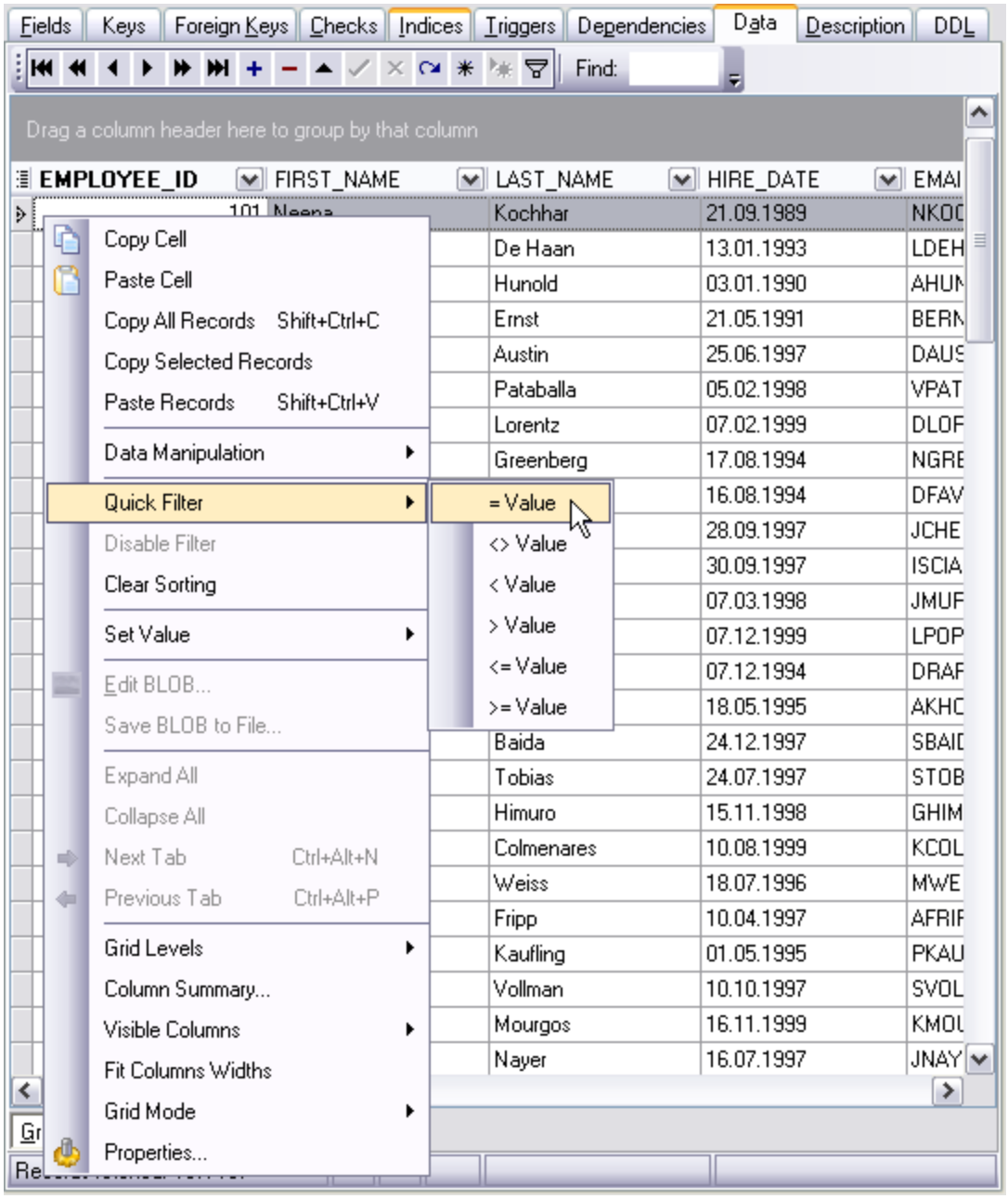

- Click the dropdown button at the column caption area and select one of the column values to filter records by this value of the selected column.
- Click the dropdown button at the column caption area, then select the **Custom** item and build a simple filter within a dialog in the following way: select a logical operator for checking the column values (like, is less than, is greater than, etc) and set the value to be checked by this operator in the right box; then set the second condition if necessary and set the relation between these two conditions, whether both of them should be matched or just any of them; use character '_' to represent any single symbol in the condition and use character '%' to represent any series of symbols in the condition.

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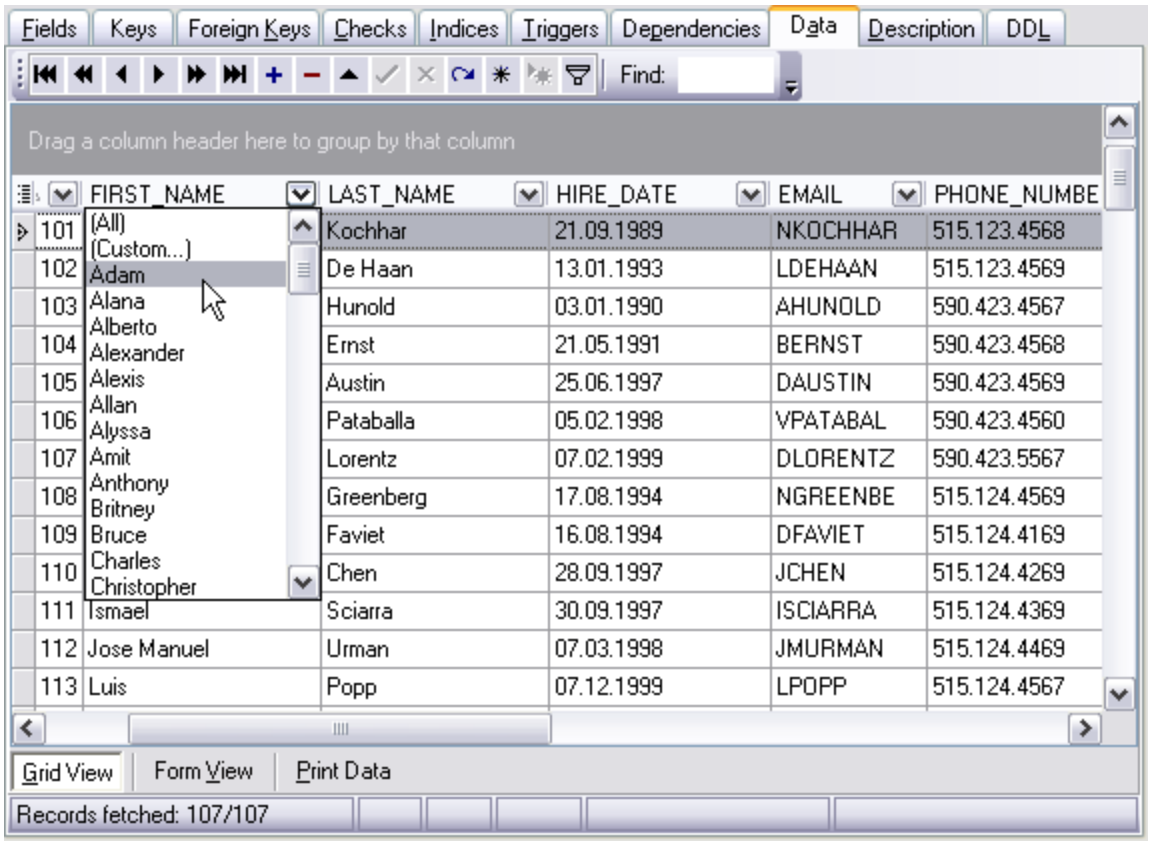

After you have set a filter, the filtering panel becomes visible at the bottom of grid, where you can see the active filtering condition and easily enable or disable it by clicking a check box at the left. Using this panel you can also customize your filter in a more complicated way by clicking the **Customize** button and building your filter within the Filter Builder Dialog.

7.1.1.3 Working in multi-level mode

One of unique features of SQL Manager 2007 for Oracle is ability to work with data in multi-level mode to view and modify data in several related tables at one time. To manage levels right-click on the grid and select **Grid Levels** submenu. It allows you to:

- Add new grid level using Create Grid Level Wizard.
- Delete current grid level.

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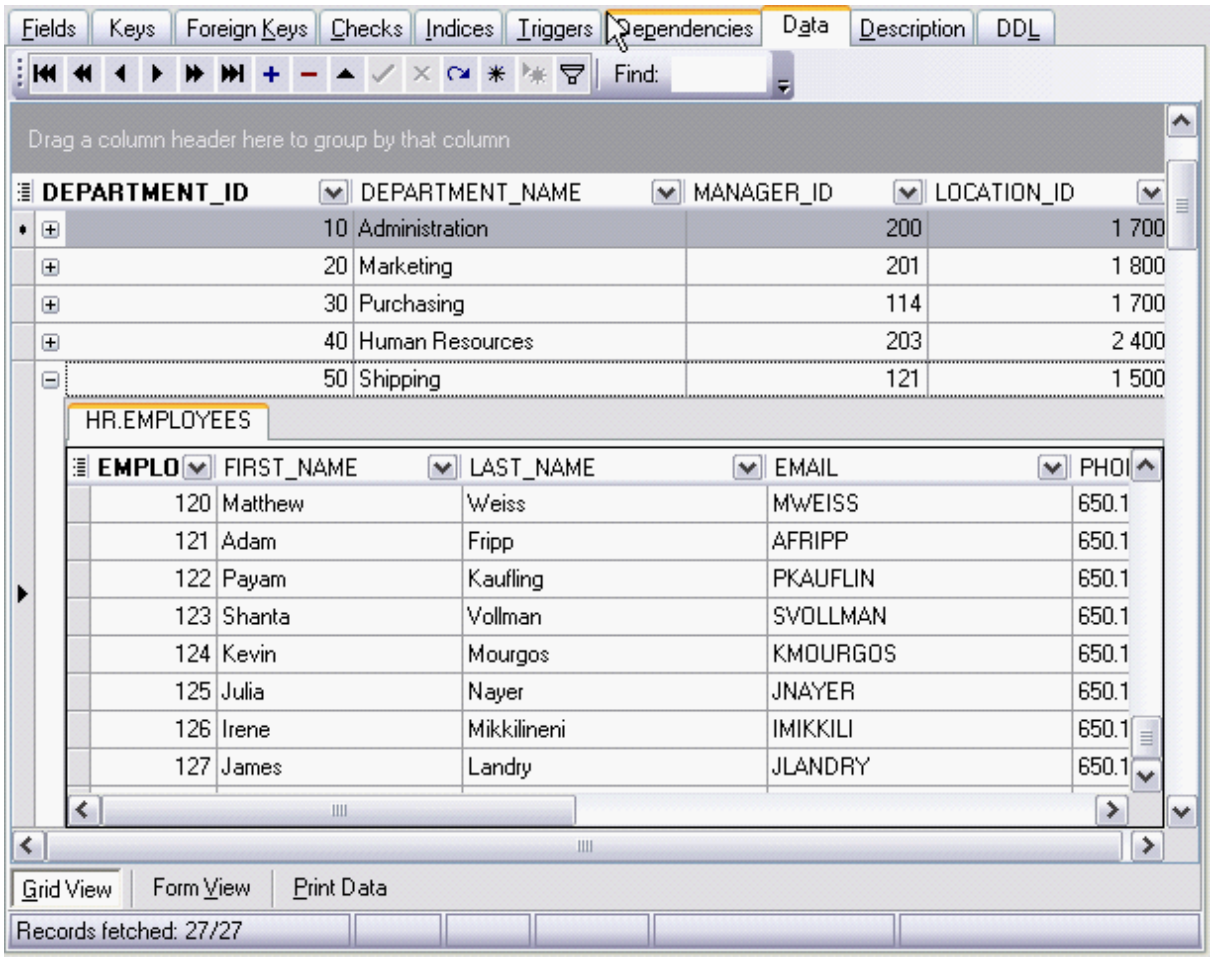

7.1.1.4 Create Grid Level Wizard

Create Grid Level Wizard allows you to add a new detail level to the grid in order to get master-detail representation of your data. To open the wizard right-click on the grid and select **Add Grid Level...** menu item from **Grid Levels** submenu.

- Specify master level.
- Select a table or a query for new level.
- Bind master and detail level fields.
- Specify additional level parameters.

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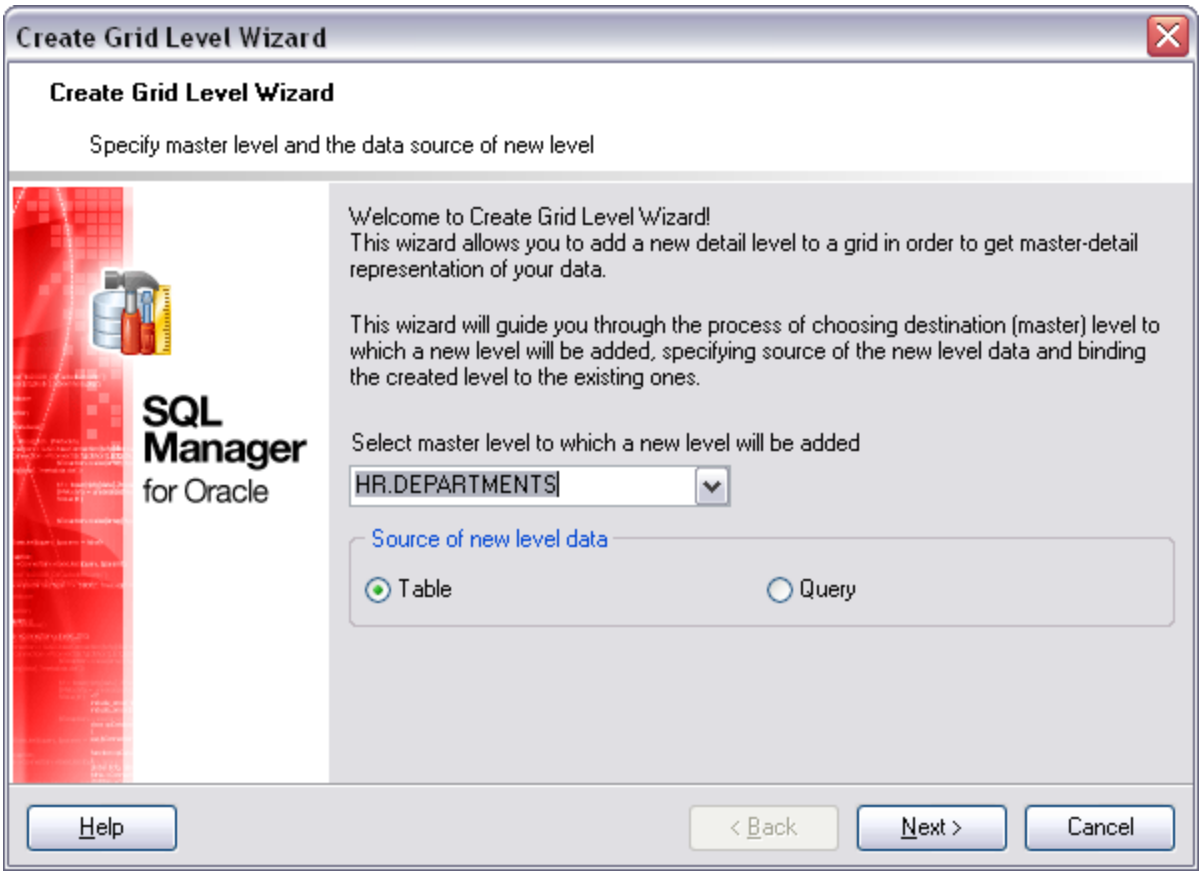
Create Grid Level Wizard
Create Grid Level Wizard
Specify master level and the data source of new level
SQL Manager for Oracle
Welcome to Create Grid Level Wizard!
This wizard allows you to add a new detail level to a grid in order to get master-detail representation of your data.
This wizard will guide you through the process of choosing destination (master) level to which a new level will be added, specifying source of the new level data and binding the created level to the existing ones.
Select master level to which a new level will be added
HR.DEPARTMENTS
Source of new level data
Table
Query
Help
< Back
Next >
Cancel

7.1.1.4.1 Specify master level

Select master level to which a new level will be added and select the source type of new level data: table or query.

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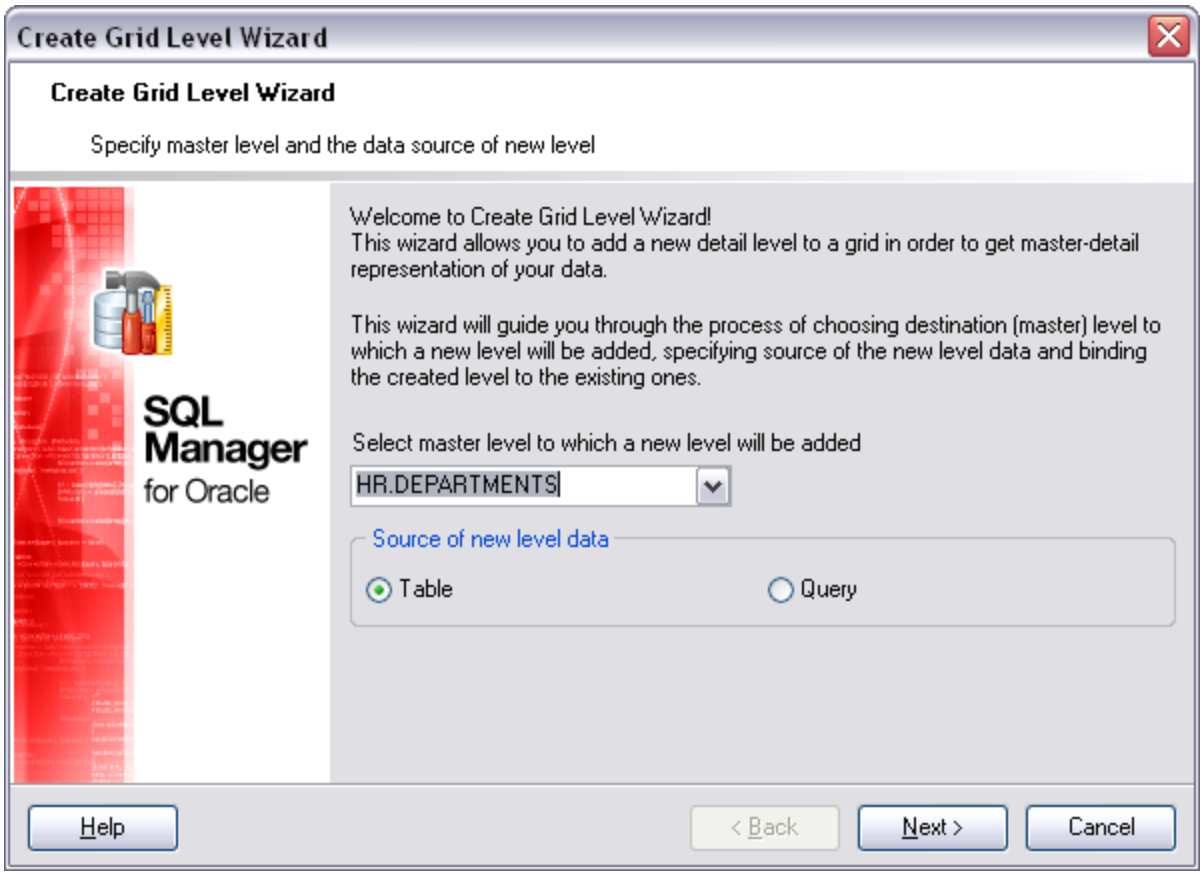
Create Grid Level Wizard
Create Grid Level Wizard
Specify master level and the data source of new level
SQL Manager for Oracle
Welcome to Create Grid Level Wizard!
This wizard allows you to add a new detail level to a grid in order to get master-detail representation of your data.
This wizard will guide you through the process of choosing destination (master) level to which a new level will be added, specifying source of the new level data and binding the created level to the existing ones.
Select master level to which a new level will be added
HR.DEPARTMENTS
Source of new level data
Table
Query
Help
< Back
Next >
Cancel

7.1.1.4.2 Select table or query for new level

Select a master table to which a new level should be added or enter a query to be used as a source of new grid level. You can use Query Builder tool if query is selected as source type.

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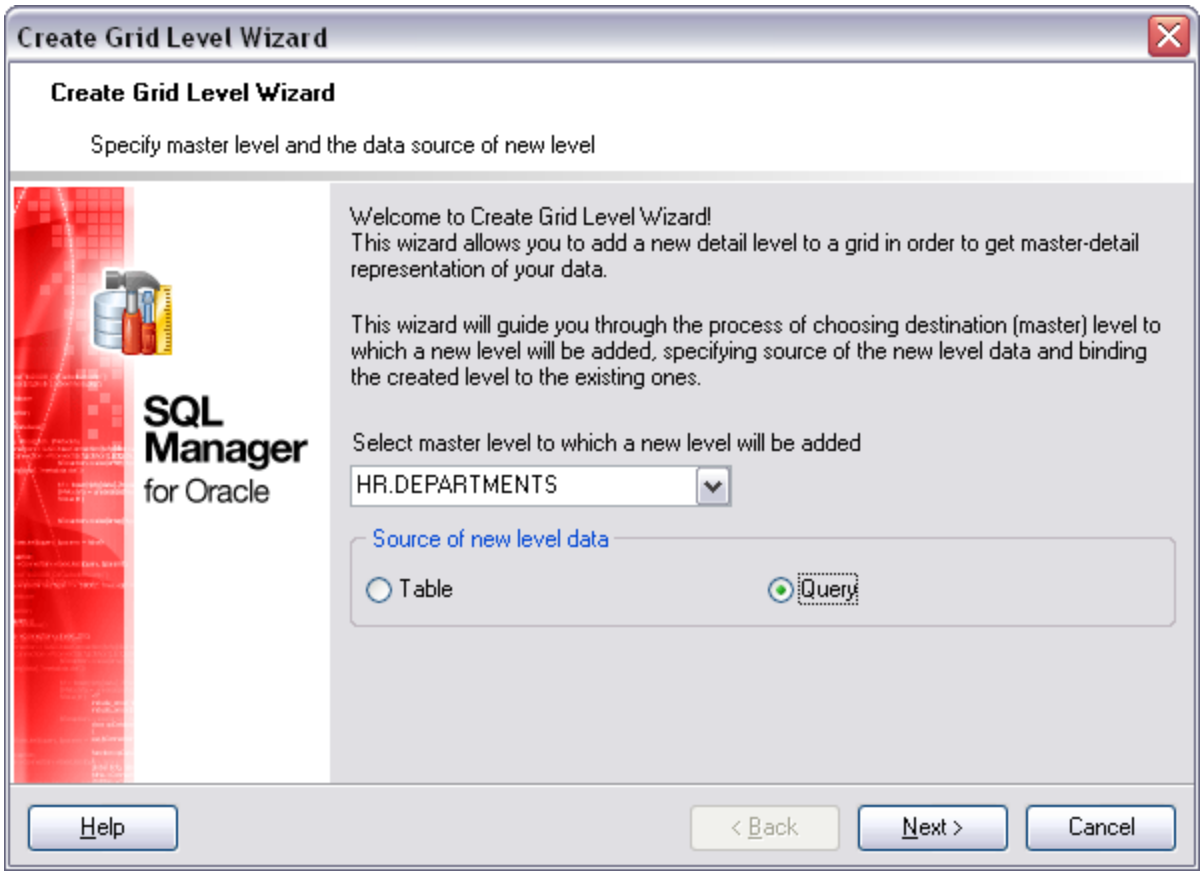
Create Grid Level Wizard
Create Grid Level Wizard
Specify master level and the data source of new level
SQL Manager for Oracle
Welcome to Create Grid Level Wizard!
This wizard allows you to add a new detail level to a grid in order to get master-detail representation of your data.
This wizard will guide you through the process of choosing destination (master) level to which a new level will be added, specifying source of the new level data and binding the created level to the existing ones.
Select master level to which a new level will be added
HR.DEPARTMENTS
Source of new level data
Table
Query
Help
< Back
Next >
Cancel

7.1.1.4.3 Selecting detail table

Specify the schema and select a table for the detail view at the corresponding drop-down lists. Set **Show tables related by foreign keys only** option to narrow list of selectable tables.

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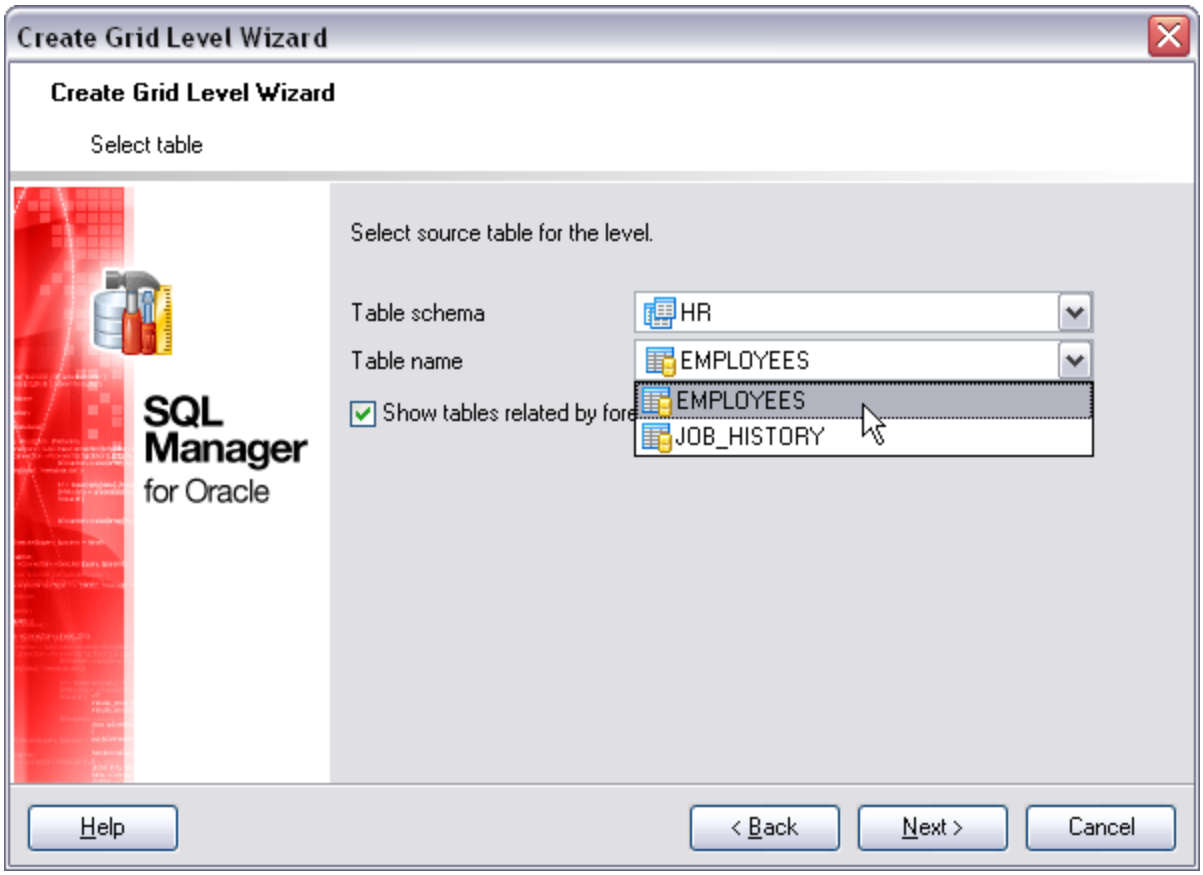

7.1.1.4.4 Bind master and detail levels

Define pairs of fields to link master and detail level data sources.

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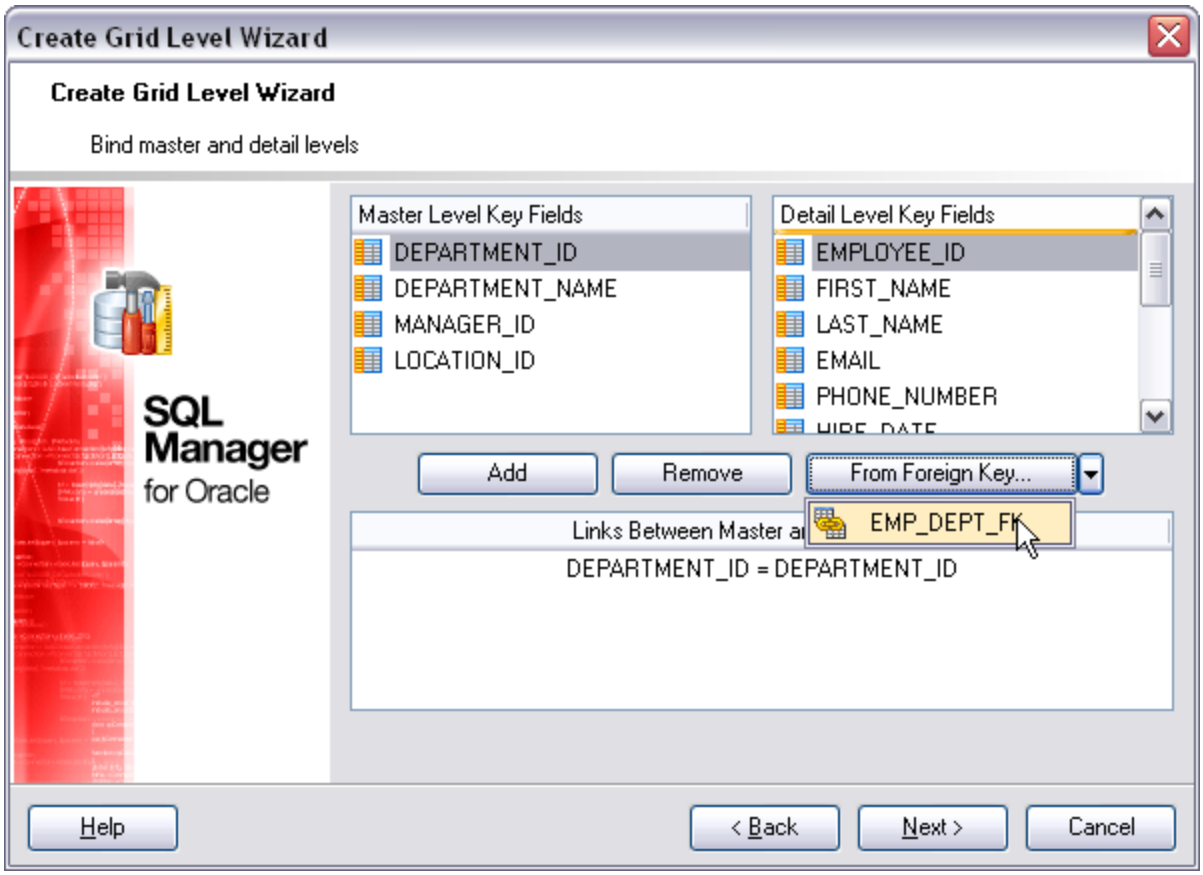

7.1.1.4.5 Specify additional parameters

Set the caption for the new level and set the type of view for the level: as a table or as a card. Click **Finish** to create new grid level.

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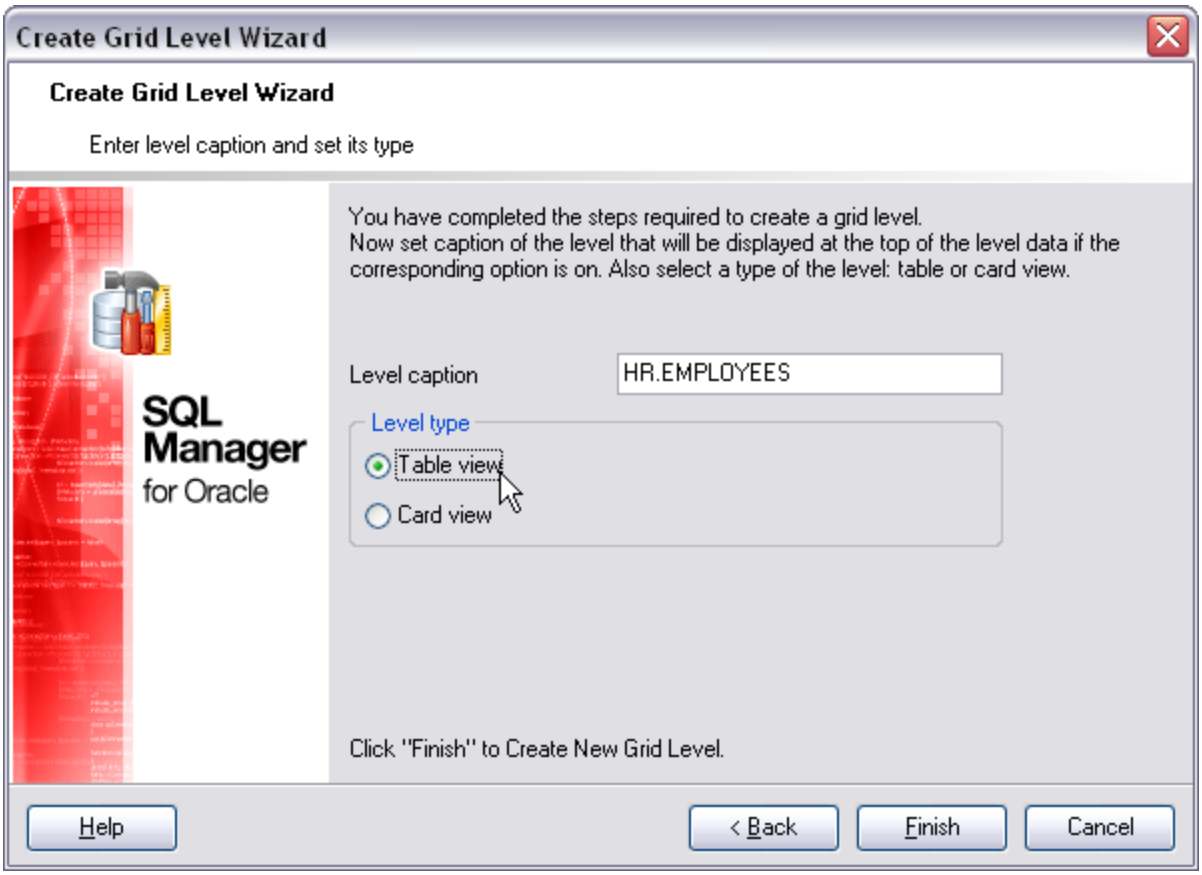
Create Grid Level Wizard
Create Grid Level Wizard
Enter level caption and set its type
SQL Manager for Oracle
You have completed the steps required to create a grid level.
Now set caption of the level that will be displayed at the top of the level data if the corresponding option is on. Also select a type of the level: table or card view.
Level caption
HR.EMPLOYEES
Level type
Table view
Card view
Click "Finish" to Create New Grid Level.
Help
< Back
Finish
Cancel

7.1.1.5 Viewing data in card view

You can represent data in table or card view according to your needs. To manage the levels representation right-click on the grid and select **Grid Levels** submenu. It allows you to:

- View data in a form of table.
- View data in a form of cards.

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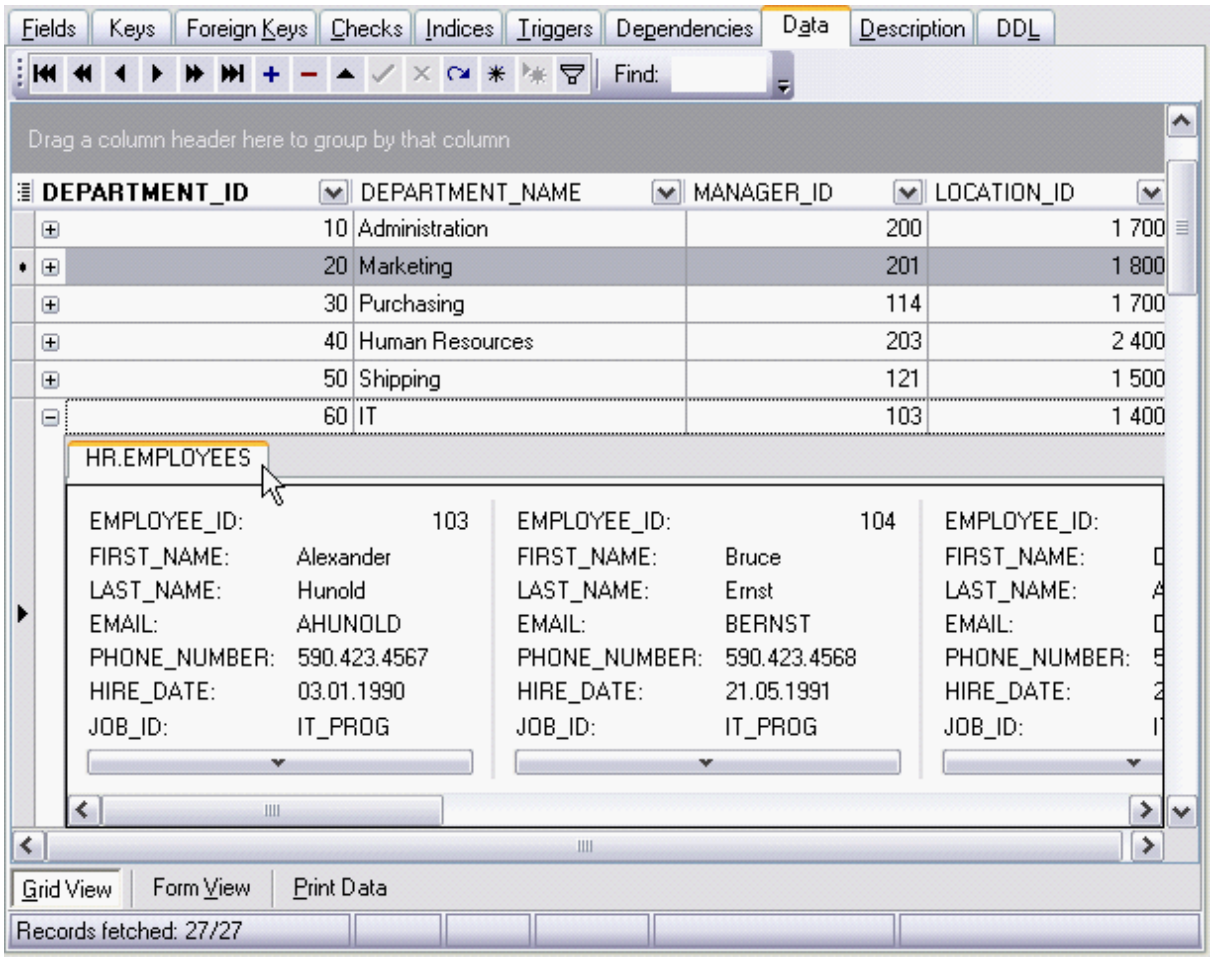

7.1.2 Form View

Form View tab allows you to view data as a form. On the form the current record is displayed: field name and its value. If these data are available for editing, you can do it on this form. The navigation bar allows you to switch the records quickly, insert, update or delete records.

Each field has a **Null** switch, which allows you to clear the field value quickly; near each number field a calculator button is placed (calculator field automatically fills the current field); near each date field calendar button is placed (date, selected in the calendar, automatically fills the current field).

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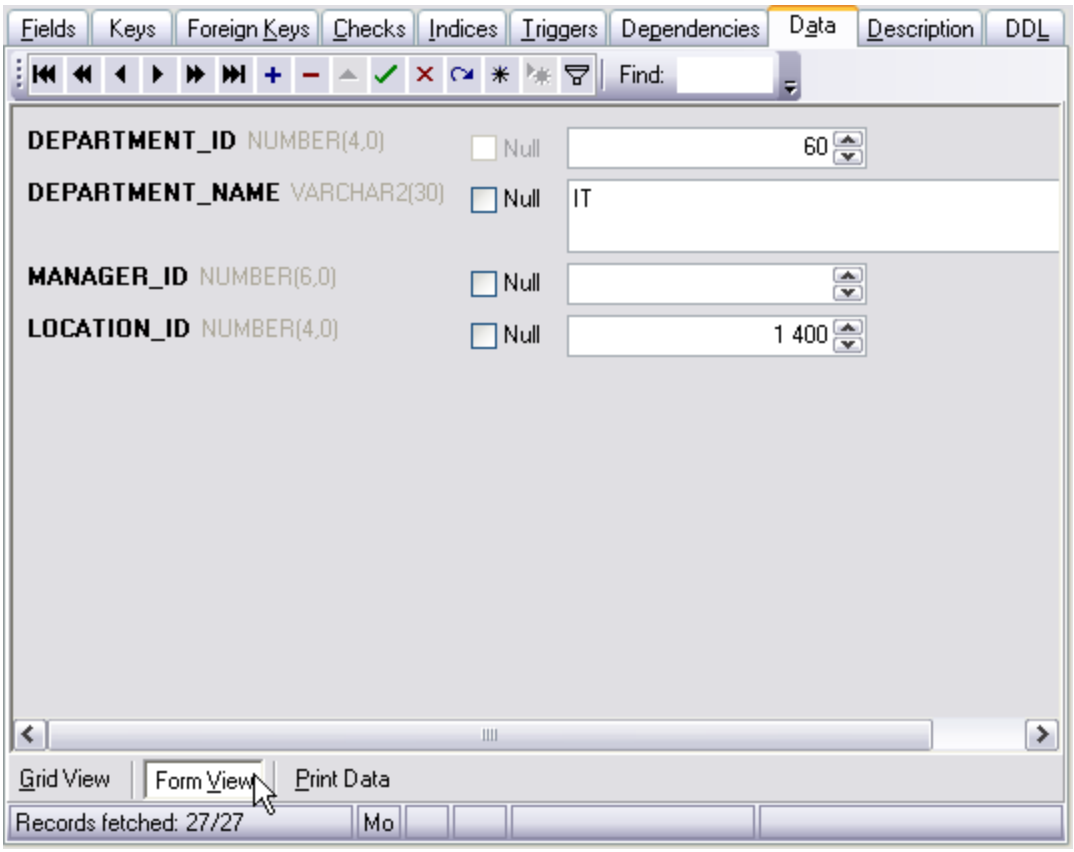

7.1.3 Print Data

At the **Print Data** tab data are displayed in the way they are printed, in WYSIWYG mode. Using buttons on the toolbar you can design report, change the view scope, save and load previously saved report, and set the page printing parameters.

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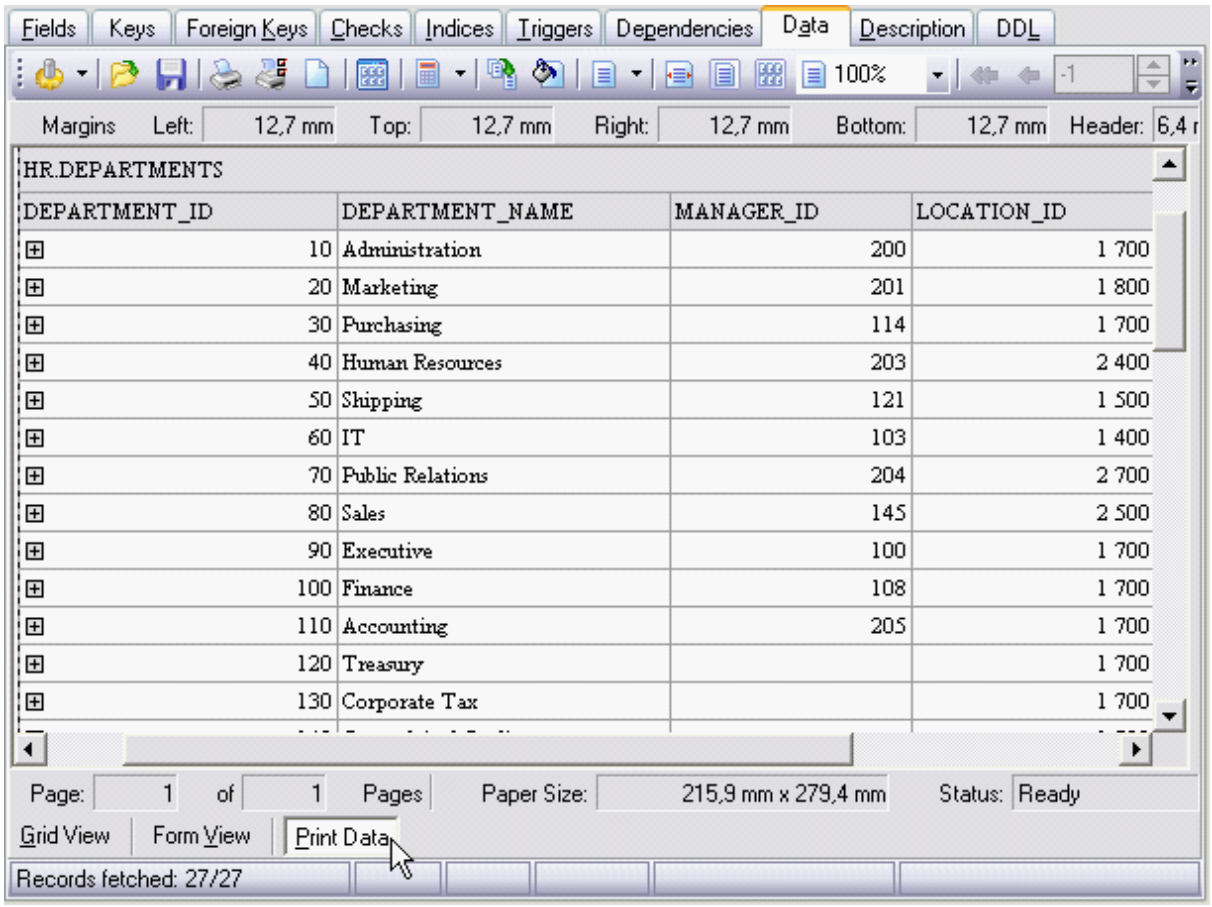

7.1.4 Blob View

SQL Manager 2007 for Oracle provides BLOB Viewer/Editor to view and edit BLOB fields content. The BLOB Viewer/Editor can be invoked from the data grid within Table Editor, SQL Editor, Visual Query Builder, etc.

- Navigating within the BLOB Viewer/Editor
- Viewing/Editing BLOB field as hexadecimal dump
- Viewing/Editing BLOB field as plain text
- Viewing/Editing BLOB field as rich text (RTF)
- Viewing/Editing BLOB field as graphical image
- Viewing/Editing BLOB field as HTML
- Applying changed to data

See also:

Data View
Table Editor
SQL Editor
Visual Query Builder

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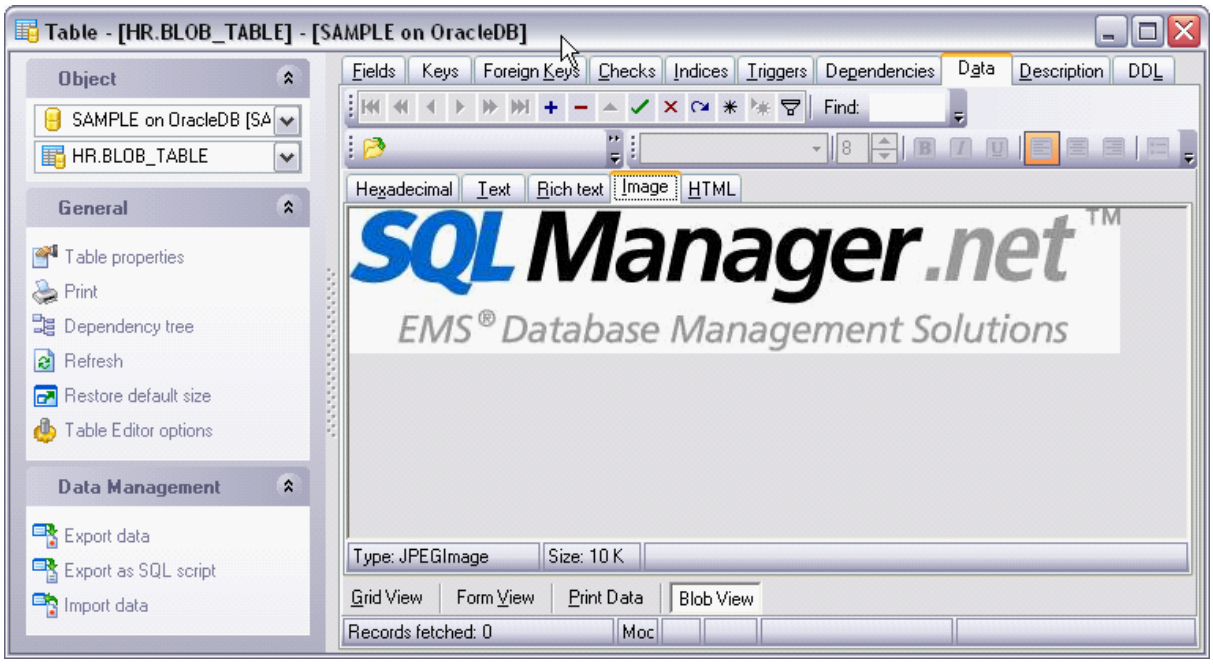
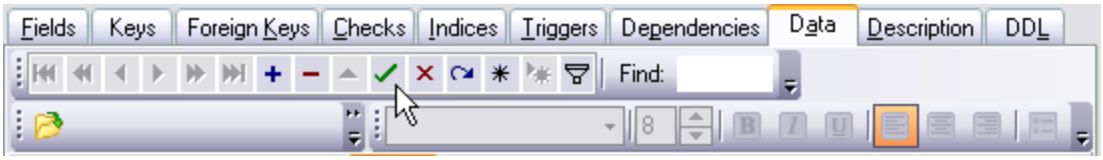


7.1.4.1 Navigating with the BLOB Editor

The **BLOB Editor** provides an ability to navigate among the records using **DB Navigation** buttons on the toolbar. Also you can load the new BLOB content and save or clear the current content by using the appropriate items on the toolbar.



7.1.4.2 Editing as hexadecimal dump

The **Hexadecimal** panel allows you to edit data in hexadecimal mode. Use the Ins key to switch between Insert and Overwrite modes.

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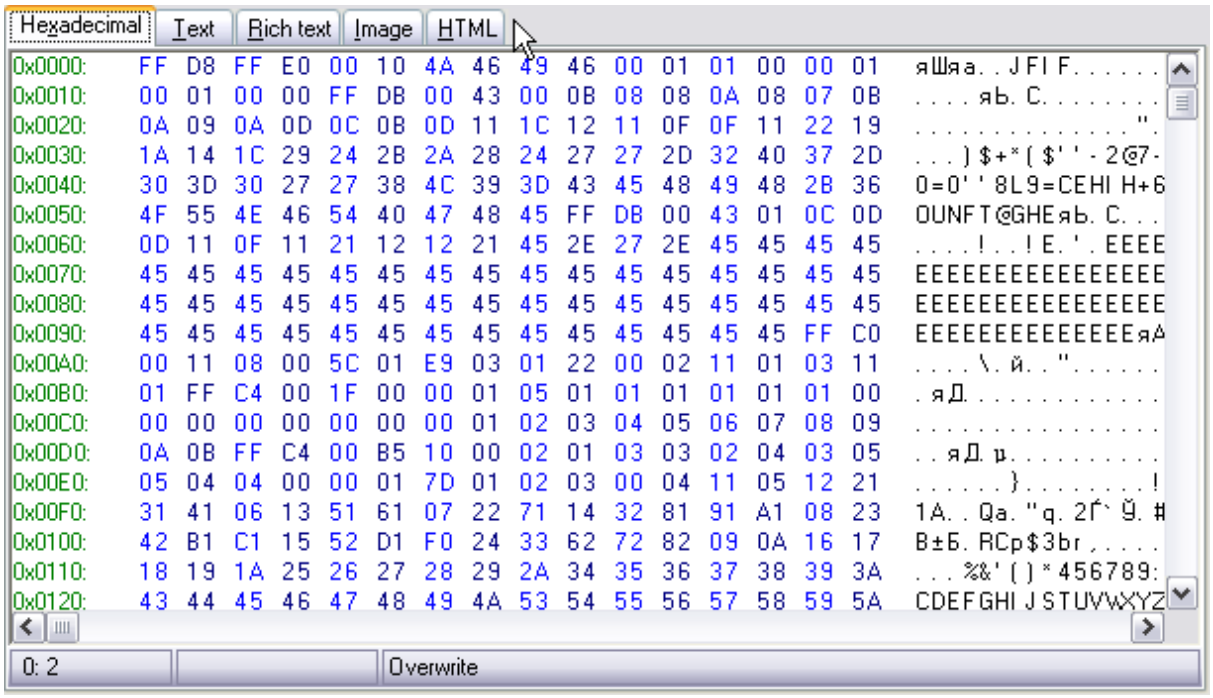

7.1.4.3 Editing as plain text

The **Text** panel allows you to edit data as a simple text. Use **Save to File** and **Load from File** items on the navigation bar to save the text to a file, or load the text from a file.

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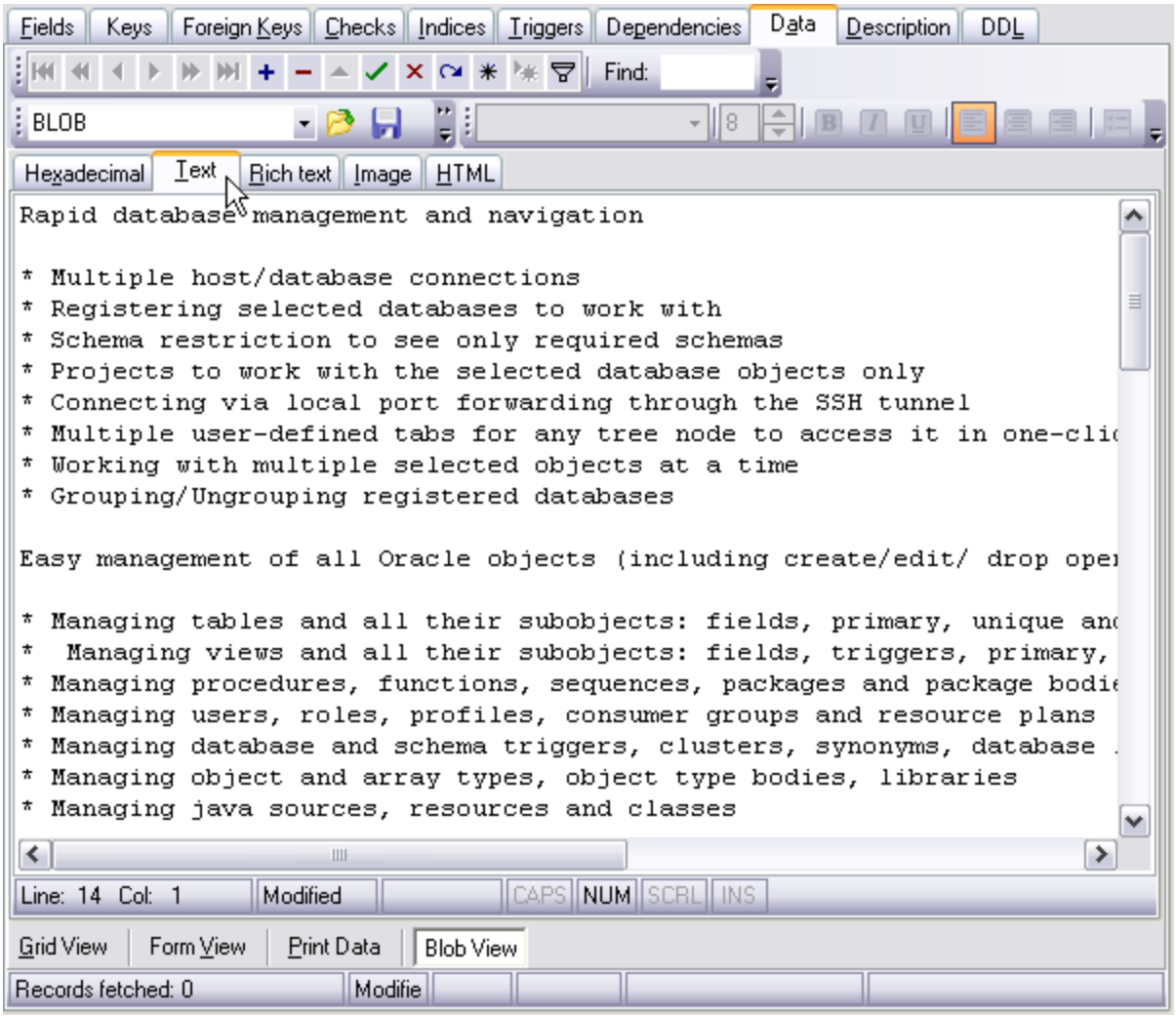
Fields
Keys
Foreign Keys
Checks
Indices
Triggers
Dependencies
Data
Description
DDL
Find:
BLOB
Hexadecimal
Text
Rich text
Image
HTML
Rapid database management and navigation
* Multiple host/database connections
* Registering selected databases to work with
* Schema restriction to see only required schemas
* Projects to work with the selected database objects only
* Connecting via local port forwarding through the SSH tunnel
* Multiple user-defined tabs for any tree node to access it in one-clic
* Working with multiple selected objects at a time
* Grouping/Ungrouping registered databases
Easy management of all Oracle objects (including create/edit/ drop oper
* Managing tables and all their subobjects: fields, primary, unique and
* Managing views and all their subobjects: fields, triggers, primary,
* Managing procedures, functions, sequences, packages and package bodie
* Managing users, roles, profiles, consumer groups and resource plans
* Managing database and schema triggers, clusters, synonyms, database
* Managing object and array types, object type bodies, libraries
* Managing java sources, resources and classes
Line: 14 Col: 1
Modified
CAPS
NUM
SCRL
INS
Grid View
Form View
Print Data
Blob View
Records fetched: 0
Modifie

7.1.4.4 Editing as rich text (RTF)

The **Rich Text** panel allows you to edit data as a Rich Text format (RTF). Use **Save to File** and **Load from File** items on the navigation bar to save the text to a file, or load the text from a file.

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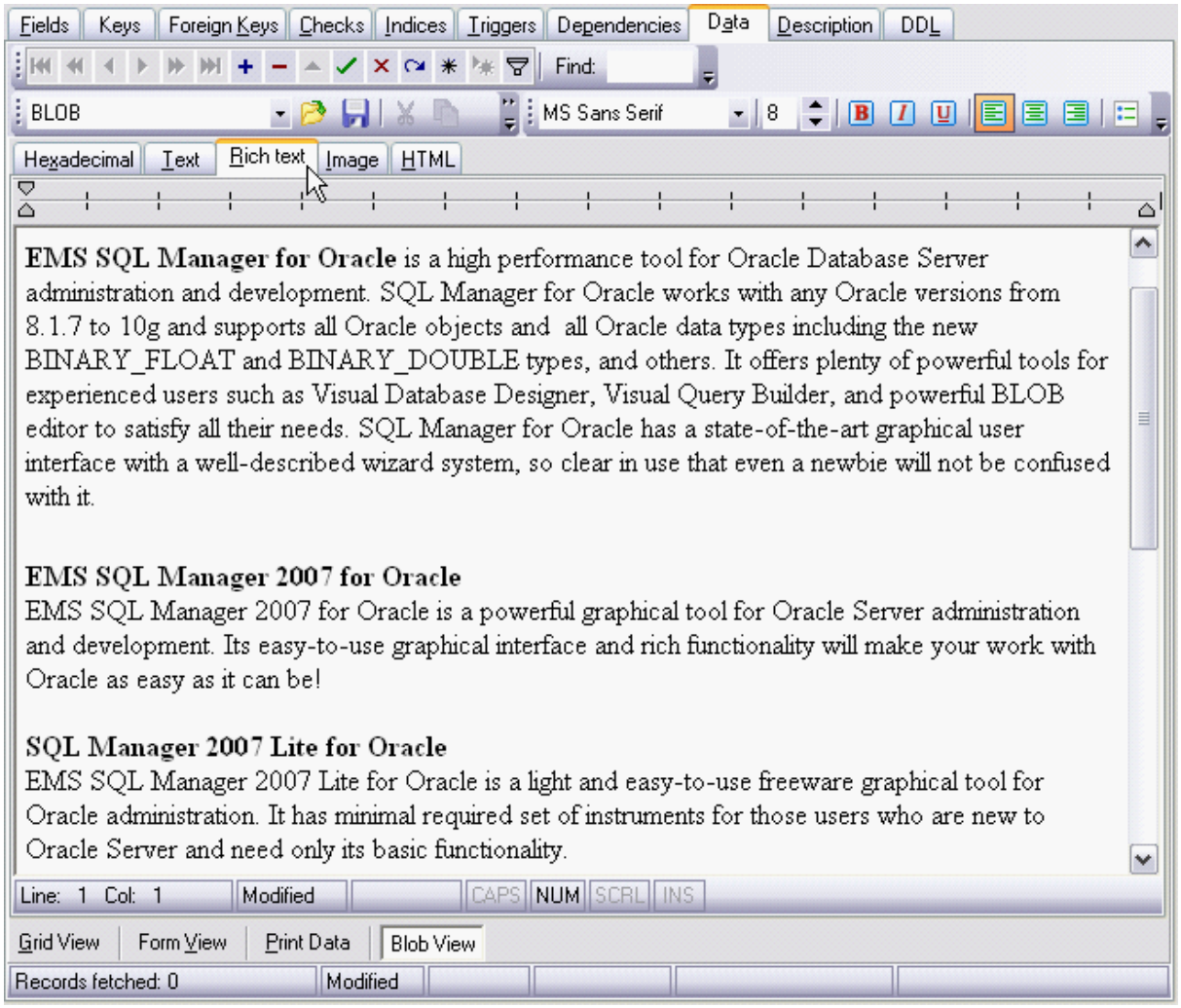
Fields
Keys
Foreign Keys
Checks
Indices
Triggers
Dependencies
Data
Description
DDL
Find:
BLOB
MS Sans Serif
8
Hexadecimal
Text
Rich text
Image
HTML
EMS SQL Manager for Oracle is a high performance tool for Oracle Database Server administration and development. SQL Manager for Oracle works with any Oracle versions from 8.1.7 to 10g and supports all Oracle objects and all Oracle data types including the new BINARY_FLOAT and BINARY_DOUBLE types, and others. It offers plenty of powerful tools for experienced users such as Visual Database Designer, Visual Query Builder, and powerful BLOB editor to satisfy all their needs. SQL Manager for Oracle has a state-of-the-art graphical user interface with a well-described wizard system, so clear in use that even a newbie will not be confused with it.
EMS SQL Manager 2007 for Oracle
EMS SQL Manager 2007 for Oracle is a powerful graphical tool for Oracle Server administration and development. Its easy-to-use graphical interface and rich functionality will make your work with Oracle as easy as it can be!
SQL Manager 2007 Lite for Oracle
EMS SQL Manager 2007 Lite for Oracle is a light and easy-to-use freeware graphical tool for Oracle administration. It has minimal required set of instruments for those users who are new to Oracle Server and need only its basic functionality.
Line: 1 Col: 1
Modified
CAPS
NUM
SCRL
INS
Grid View
Form View
Print Data
Blob View
Records fetched: 0
Modified

7.1.4.5 Editing as image

The **Image** panel shows field data as image. Use **Save to File** and **Load from File** items on the navigation bar to save the image to a file, or load the image from a file.

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7.1.4.6 Editing as HTML

The **HTML** panel displays field data in Hyper-Text Markup Language format (HTML). You can load a new content to the field using **Load from File** item on the navigation bar, or save current field content to a file using **Save to File** item.

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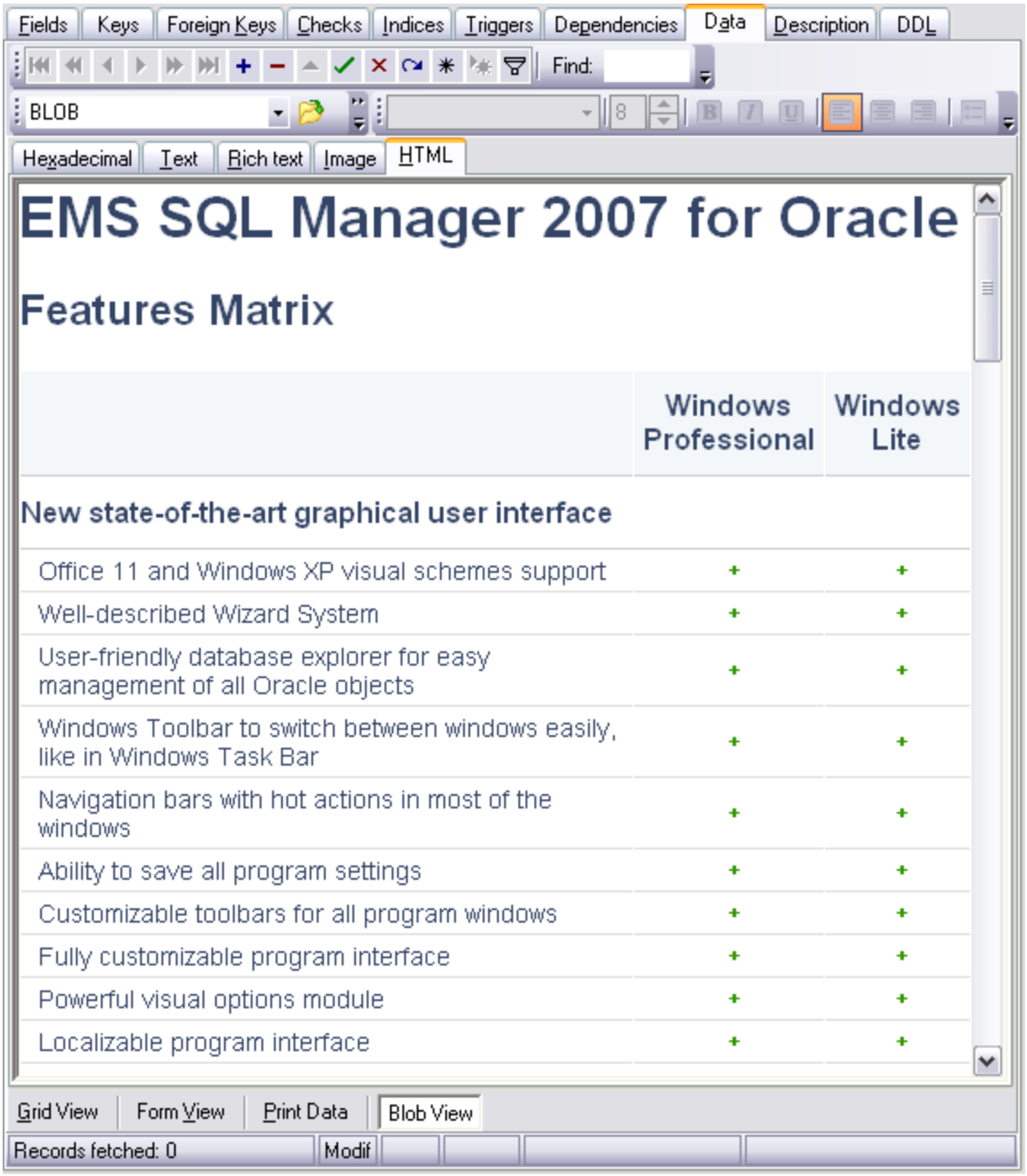
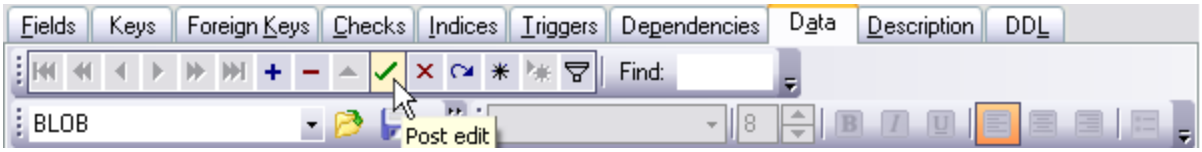


7.1.4.7 Applying changes

After changes are done, click **Post Edit** button to apply the changes or **Cancel Edit** to discard them.



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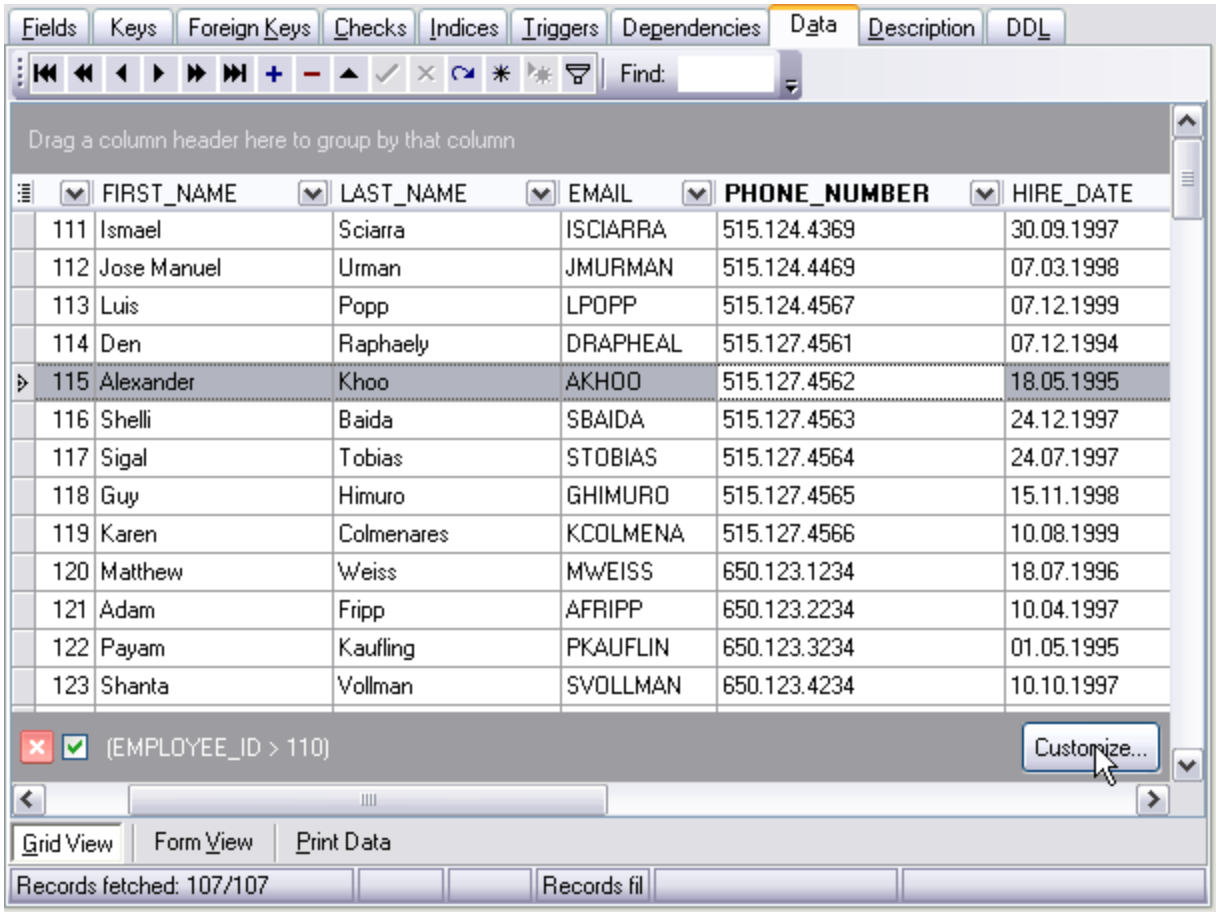
7.2 Filter Builder Dialog

SQL Manager 2007 for Oracle provides the Filter Builder dialog to facilitate creating and applying filter criteria for the data grid within Table Editor, SQL Editor, Visual Query Builder, etc. In addition, it allows you to save filter criteria to an external file for future use.

- Invoking the Filter Builder dialog
- Adding new condition to the filter
- Setting filter criteria in condition
- Setting filter operator in condition
- Setting filter criteria values in condition
- Adding new group to condition
- Setting group operator in the condition
- Applying filter conditions

See also:

Data View
Table Editor
SQL Editor
Visual Query Builder



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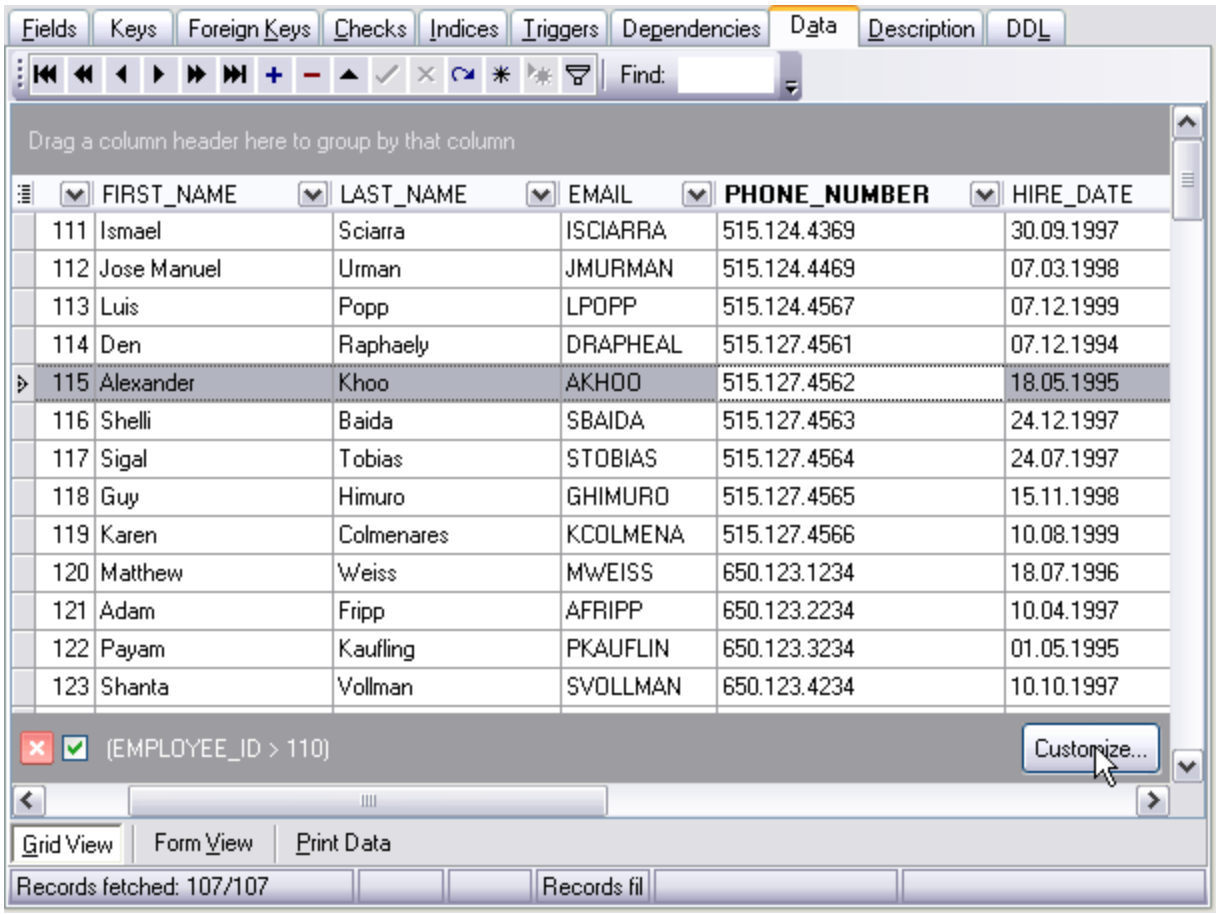
7.2.1 Invoking the Filter Builder dialog

To call the **Custom filter** window click the **Customize** button on the Filter panel. This panel is visible if any filtering is already applied to the grid (you can use column header menu or grid menu for quick filtering).



To invoke the Filter Builder Dialog, please press the **Filter** button which is left to **Find**: item at the dataset navigation bar.

To illustrate usage of Filter Builder Dialog, see example in the next topics.

7.2.2 Adding new condition

Suppose we need to select employees from the sample table Employees with the ID greater than 100.
These criteria are applied to the Employee_ID column. Click the **press the button to add a new condition** box. This will add a new condition to the criteria. Alternatively, you can left-click the Filter box and select the **Add Condition** option from the dropdown menu.

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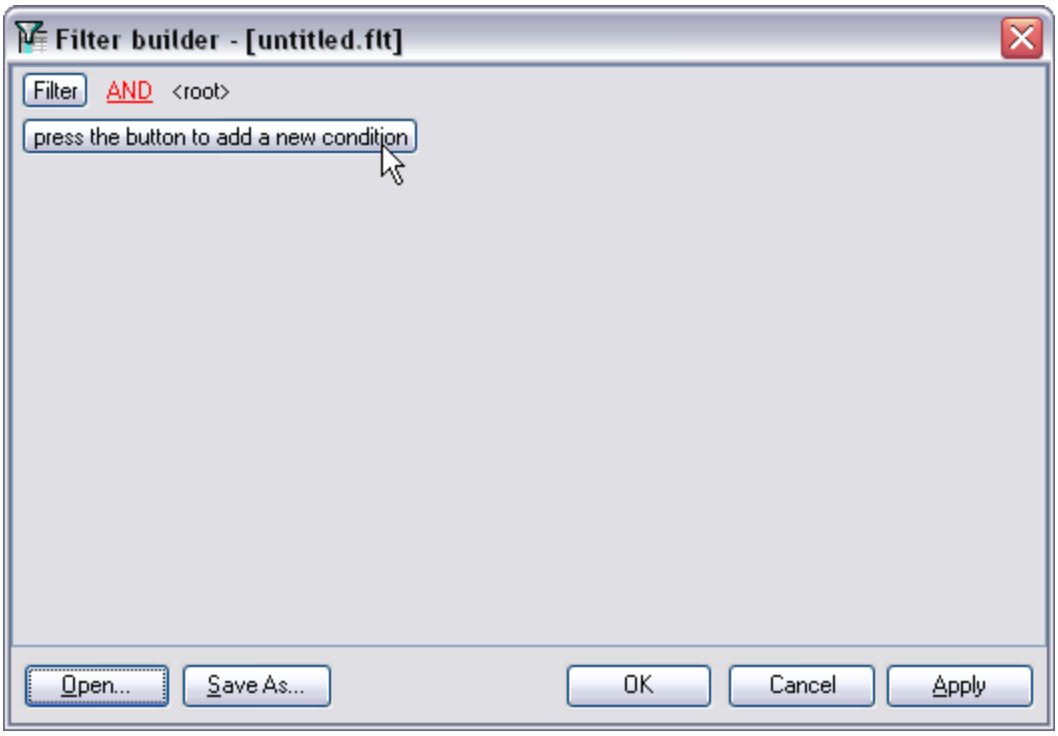

Next Step >>

7.2.3 Setting filter criteria

As we need to apply the **filter criteria** to the Employee_ID column, left-click the column box (next to the ellipsis button) to open the dropdown list displaying the available column names. Then select the Employee_ID item.

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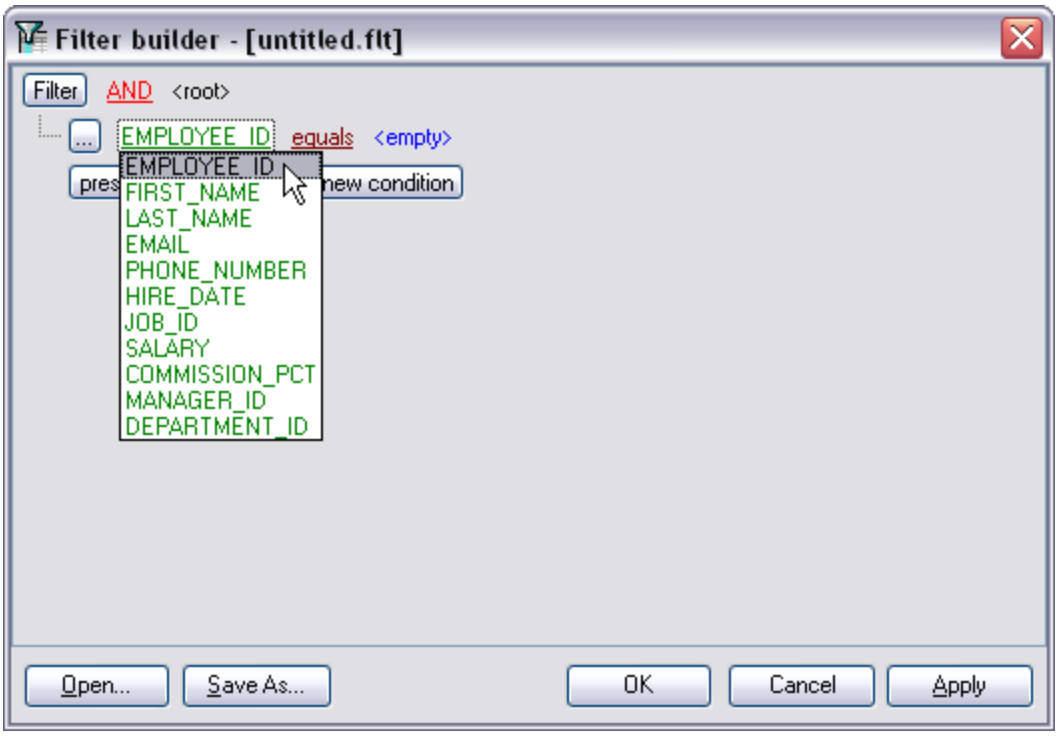
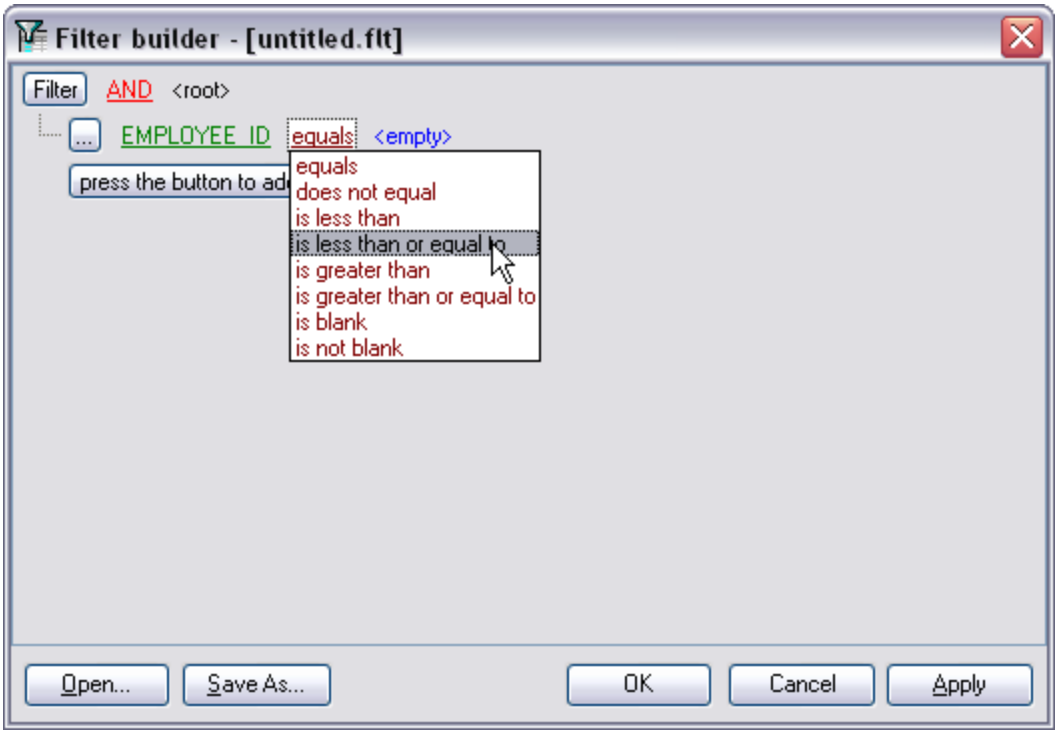


Next Step >>

7.2.4 Setting filter operator

Select the 'Greater than' item in the operator box. This will add one empty value box to specify the range for the 'Greater than' condition.



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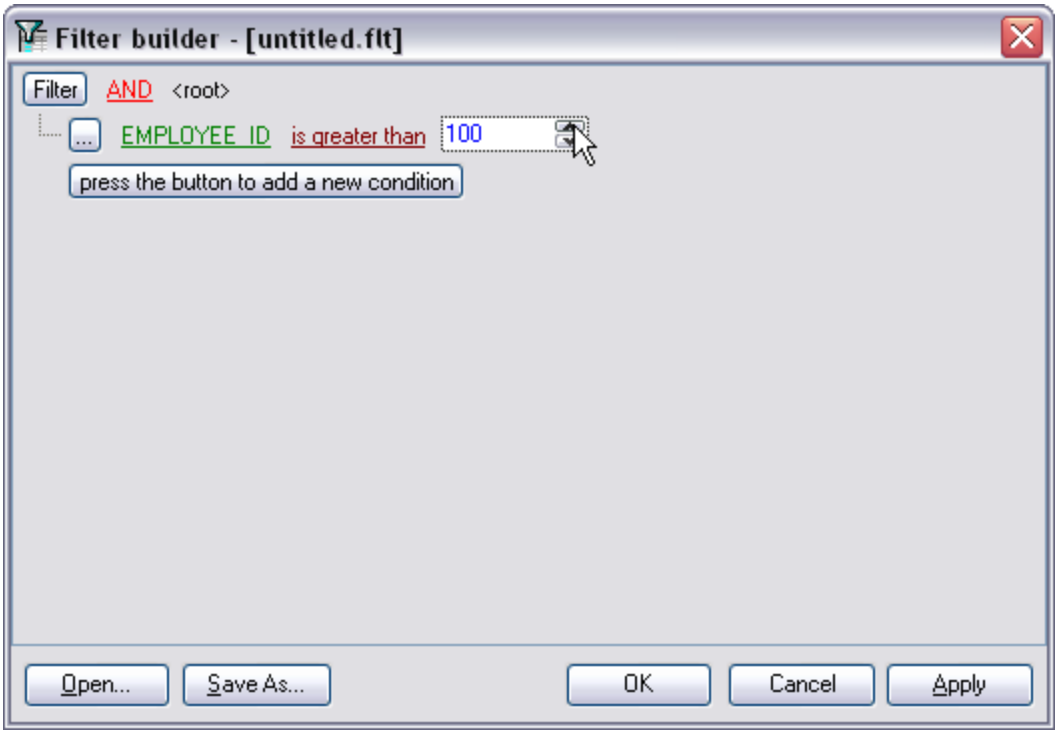
Next Step >>

7.2.5 Setting filter criteria values

On this step, you need to specify the range for the 'Greater than' operator.
You can do this either manually by typing a value using the keyboard or via the value editor activated when you click the value box.



Next Step >>

7.2.6 Adding new group

If you need to add a group of conditions, left-click the ellipsis button for the Employee_ID condition and select **Add Group** menu item.

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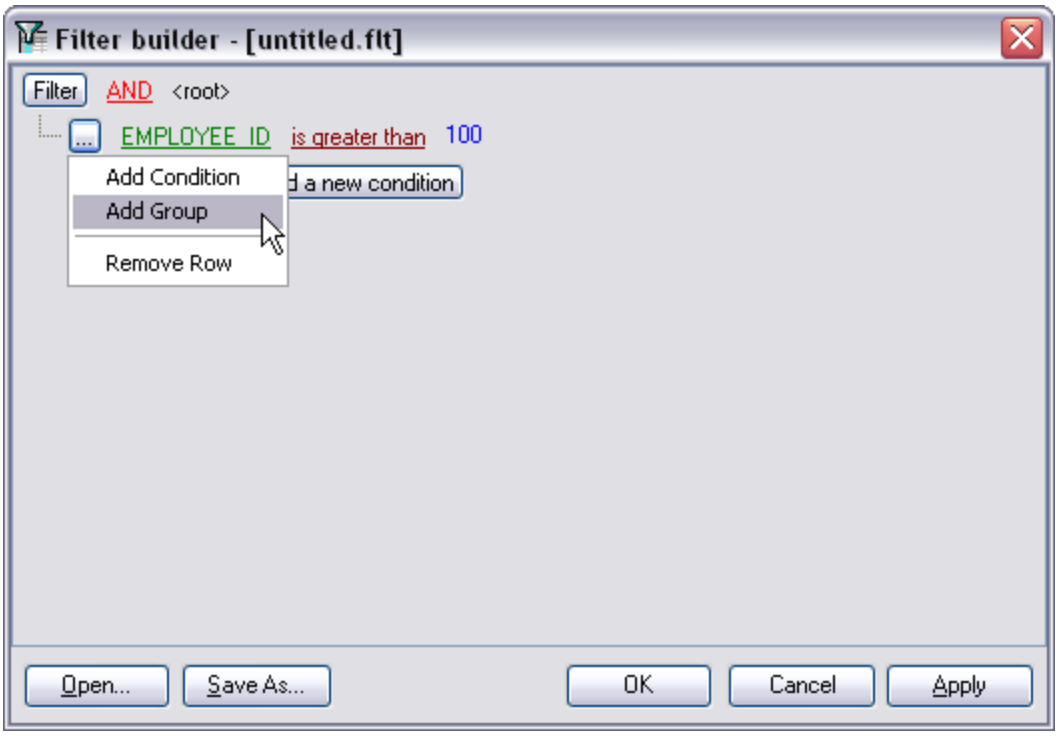
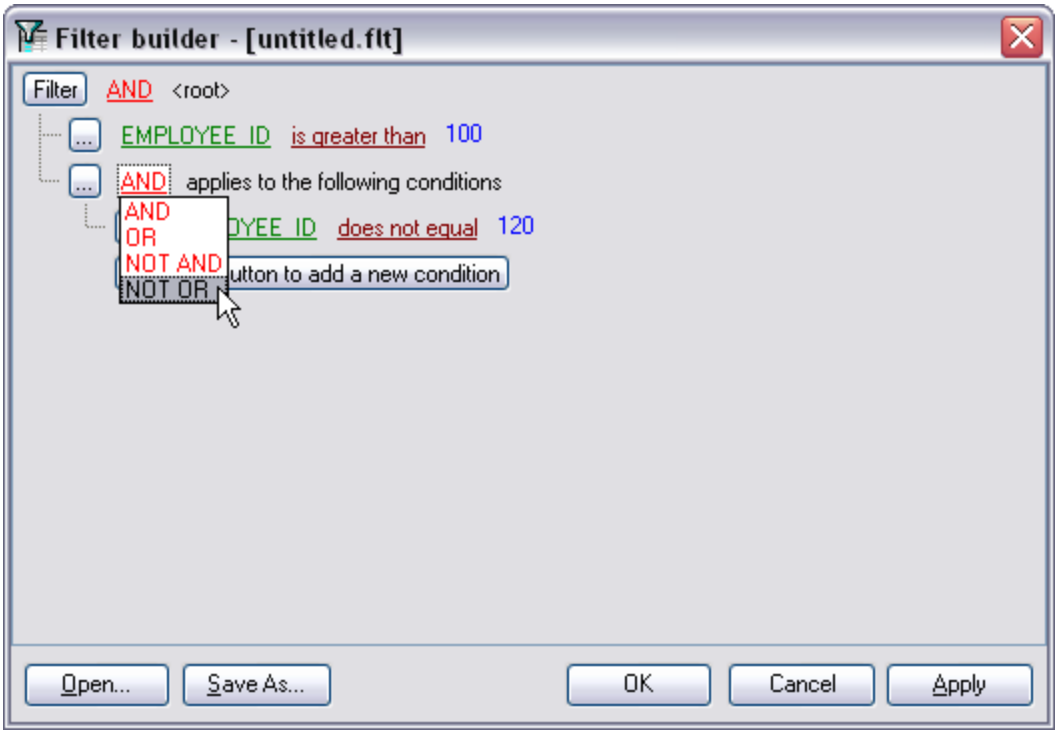


Next Step >>

7.2.7 Setting group operator

To set the group operator, left-click the operator box (by default, it specifies AND operator) and select OR item from the menu.



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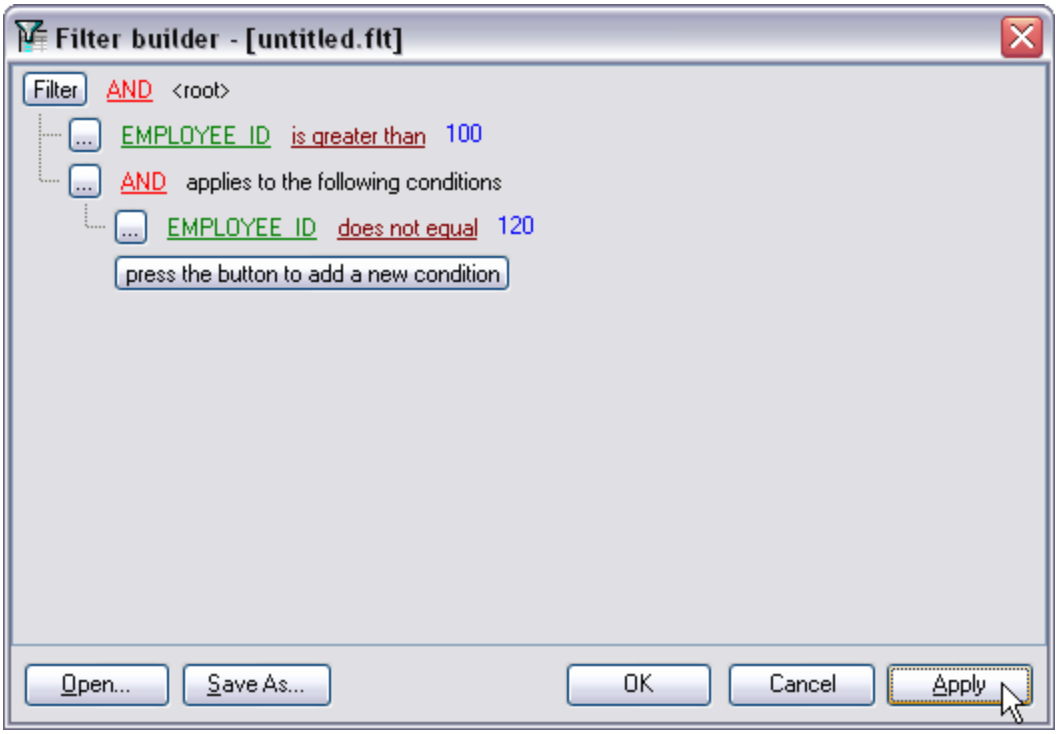
Next Step >>

7.2.8 Applying filter conditions

Click **Apply** button to see the result of the filtering you made and click **OK** or **Cancel** to close the dialog with or without saving your filter correspondingly.



The Filter Builder dialog allows you to save filter criteria to and load them from an external file. Clicking **Save As...** or **Open...** buttons activates one of these dialogs. Filter settings are stored in a file with .flt extension. A column in the file is referenced by its position within a view. This means that filter settings cannot be correctly restored if columns were deleted from the view after saving the filter to a file.

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Part

8 Import/Export Tools

SQL Manager 2007 for Oracle provides powerful tools to import and export data.

- Export Data
  Exports data to various formats, including MS Excel, MS Access, RTF, HTML, PDF and more.
- Export Data As INSERT
  Exports data to the SQL script as a number of INSERT statements.
- Import Data
  Imports data from MS Excel, MS Access, DBF, TXT, and CSV.
- Using templates

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8.1 Export Data Wizard

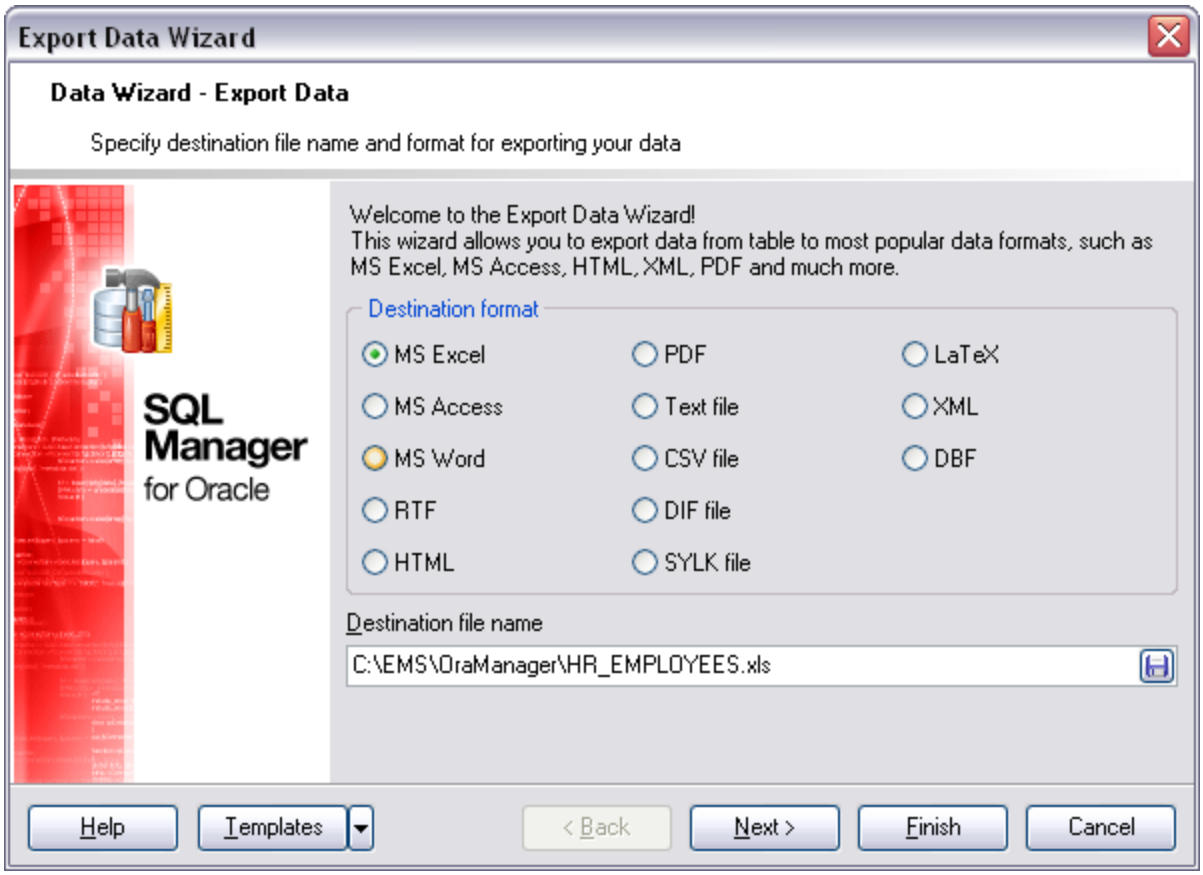
Export Data Wizard allows you to export data from table, view, procedure or query result to any available format. You can save your settings as a template at any time for later use.

To call the wizard right-click the table (view, procedure, etc.) in DB Explorer, select **Data Manipulatiton** and corresponding operation then. Another way is to select **Data** tab of **Table Editor/View Editor**, then corresponding menu item of the **Data Management** bar (navigation bar) or simply use context menu of the **Grid -> Data Manipulation**.

- Setting name and format for destination file
- Selecting fields for export
- Adjusting formats applied to exported data
- Setting header and footer text for destination file
- Setting options according to the selected format
- Setting common export options
- Using templates

See also:

Export As SQL Script Wizard
Import Data Wizard



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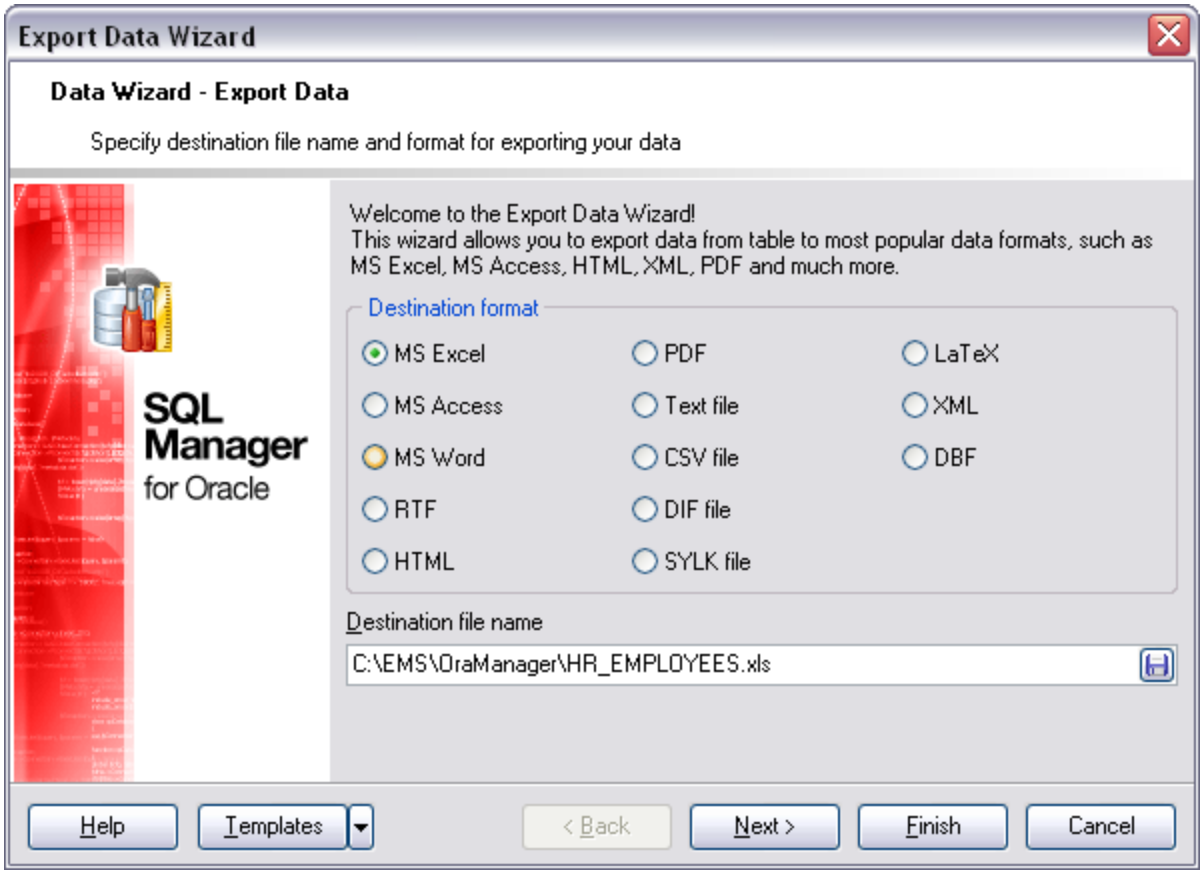
8.1.1 Setting destination file name and format

Select one of the available destination formats and set name for the result file. The file name extension in the **Destination file name** box changes according to the selected export type.



Destination format

MS Excel - the most popular e-table format - Microsoft Excel. The result files are fully compatible with the versions 95, 97, 2000 and XP.

MS Access - export to Microsoft Access format trough an ADO connection.

MS Word - one of the most popular text processing format - Microsoft Word. The result files are fully compatible with the versions 95, 97, 2000 and XP.

RTF - Rich Text Format supported by many text processing programs (e.g. WordPad).

HTML - as it follows from its name, exports data to HTML files (complete compatibility with HTML 4.0 specification).

PDF - the PDF format is a standard and general format in electronic publishing.

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Text file - the plain text format.

CSV - Comma Separated Value format.

DIF - Data Interchange File format.

SYLK - Symbolic Links format.

Note: all the text formats including Text file, CSV, DIF, SYLK are usually used as working or interchange formats.

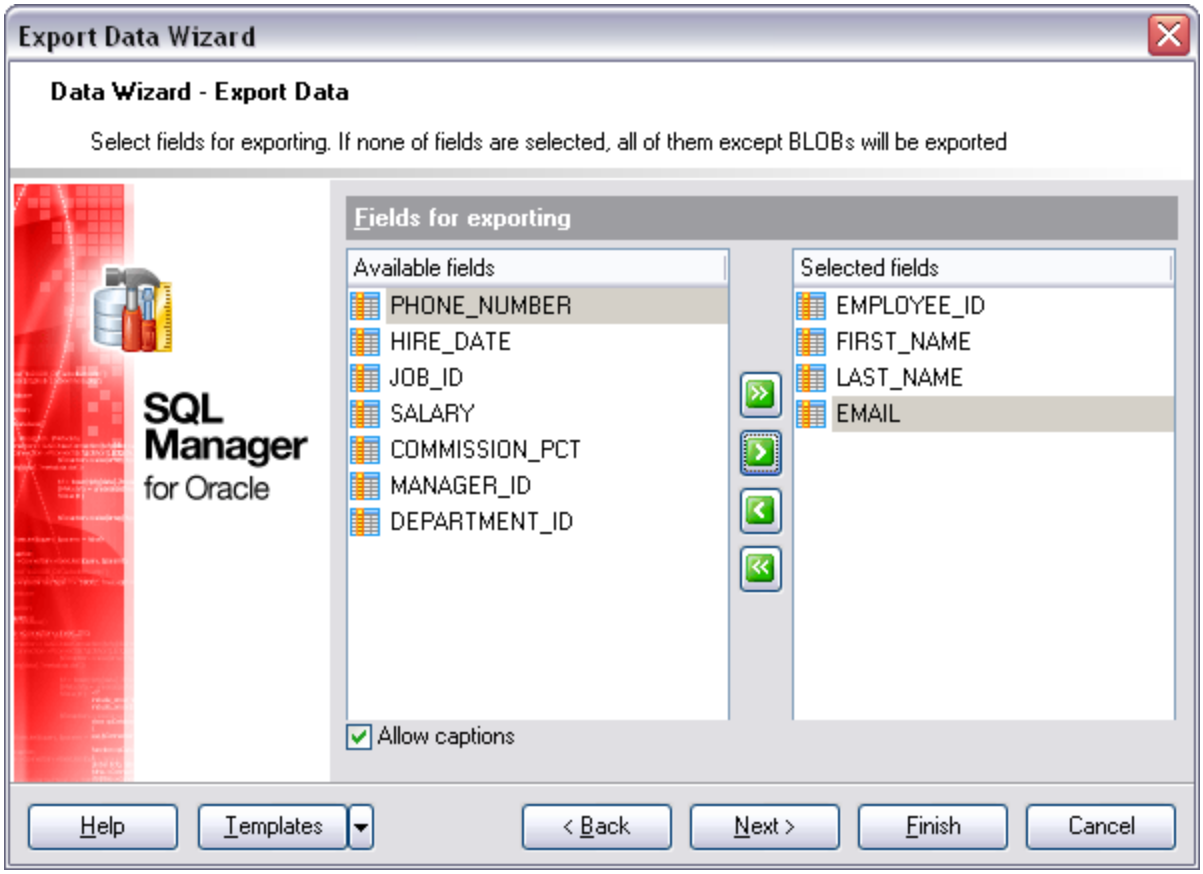
LaTeX - the LaTeX format, which is a popular (especially among mathematicians and physicists) macroextension of TeX pack developed by D.Knut.

XML - the XML format. XML is a markup language for documents containing structured information.

DBF - the data will be exported to the DBF format.

8.1.2 Selecting fields for export

Select table fields for export. If you leave all the fields in the Available Fields list, all fields will be exported except BLOBs.



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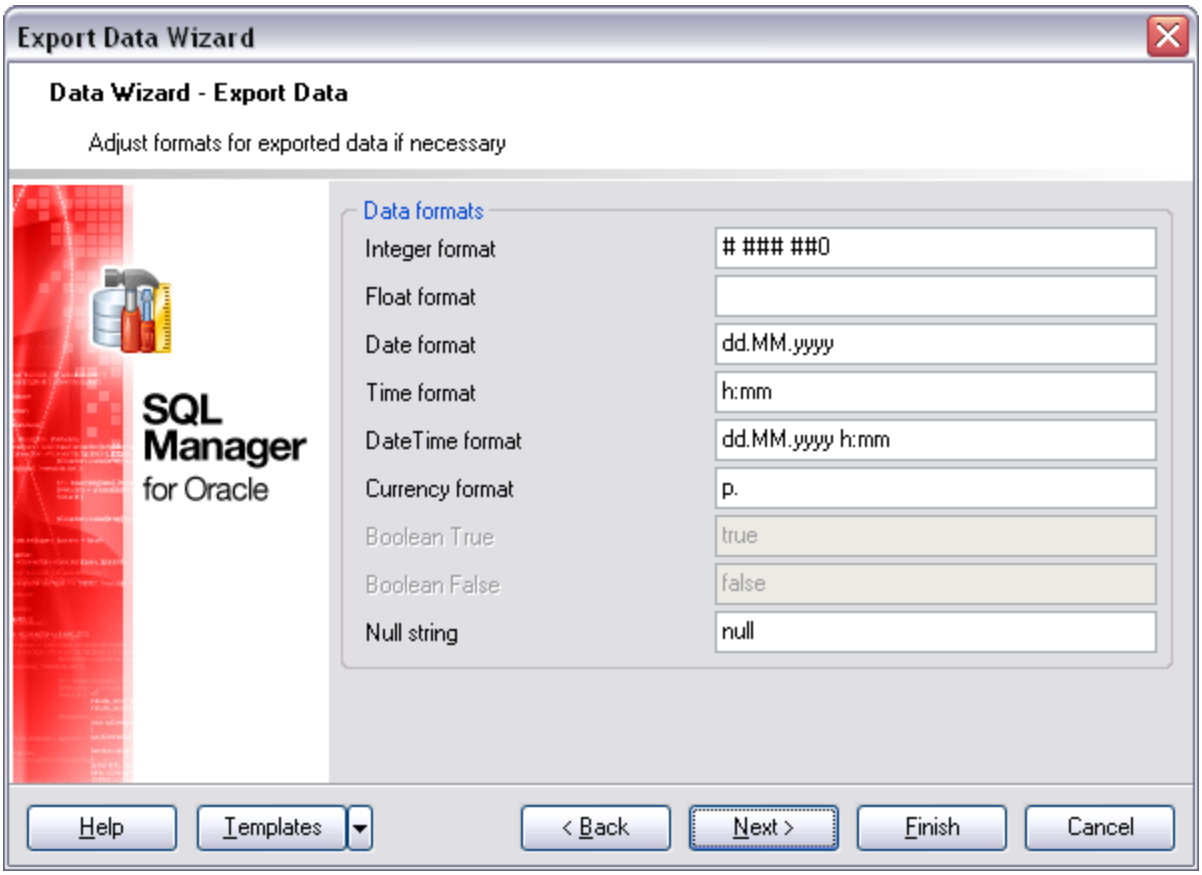
8.1.3 Adjusting data formats

This step allows you to customize formats applied to exported data. Edit the format masks to adjust the result format in the way you need.

For more details see Format specifiers.



8.1.4 Setting header and footer

Set header and footer text for the result file. This text will appear before or after data in the result file respectively.

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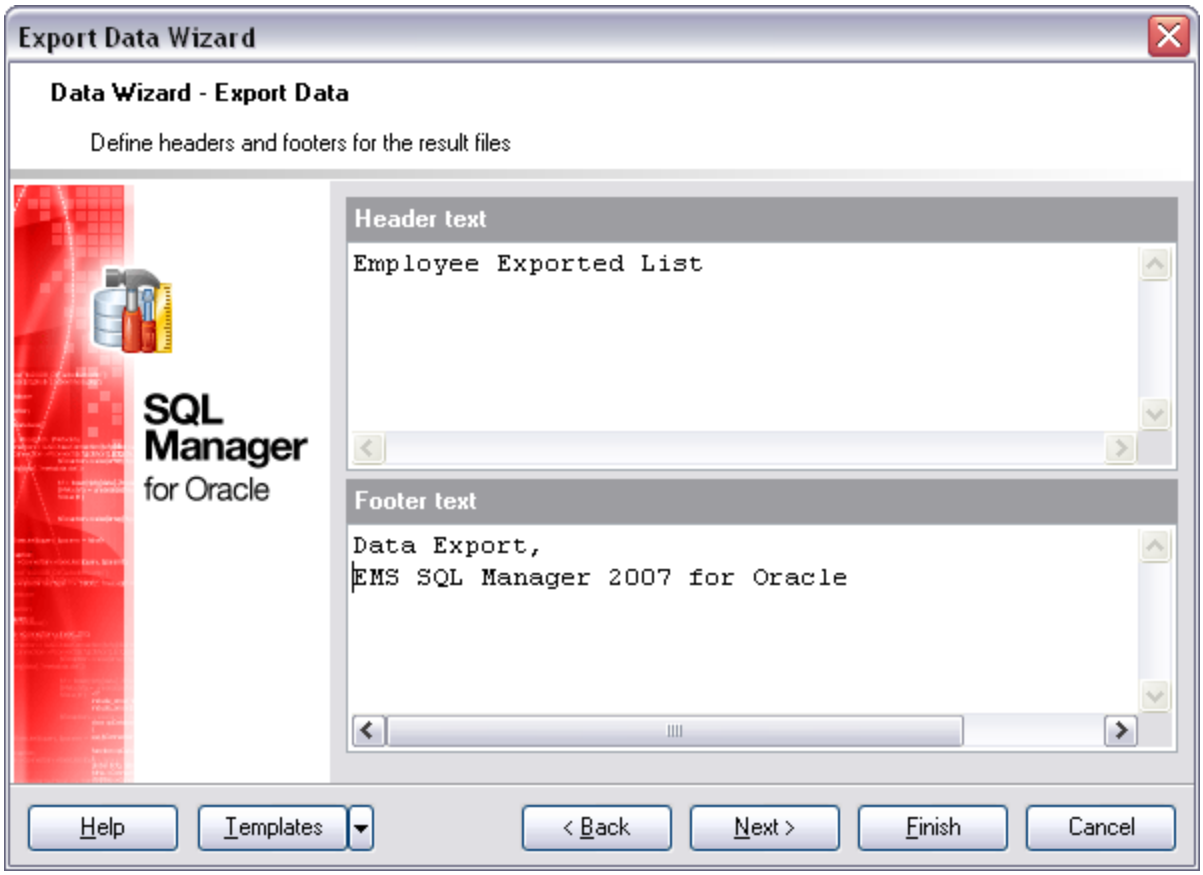

8.1.5 Setting format-specific options

Data Export Options are defined on Step 5 of the Export Data Wizard.

- Excel Options
- Access Options
- Word / RTF Options
- HTML Options
- PDF Options
- TXT Options
- CSV Options
- XML Options

8.1.5.1 Excel options

This step allows you to customize options for target MS Excel file.

You can customize **Data format**, **Extensions** and set **Advanced** options.

- Data format
- Extensions
- Advanced

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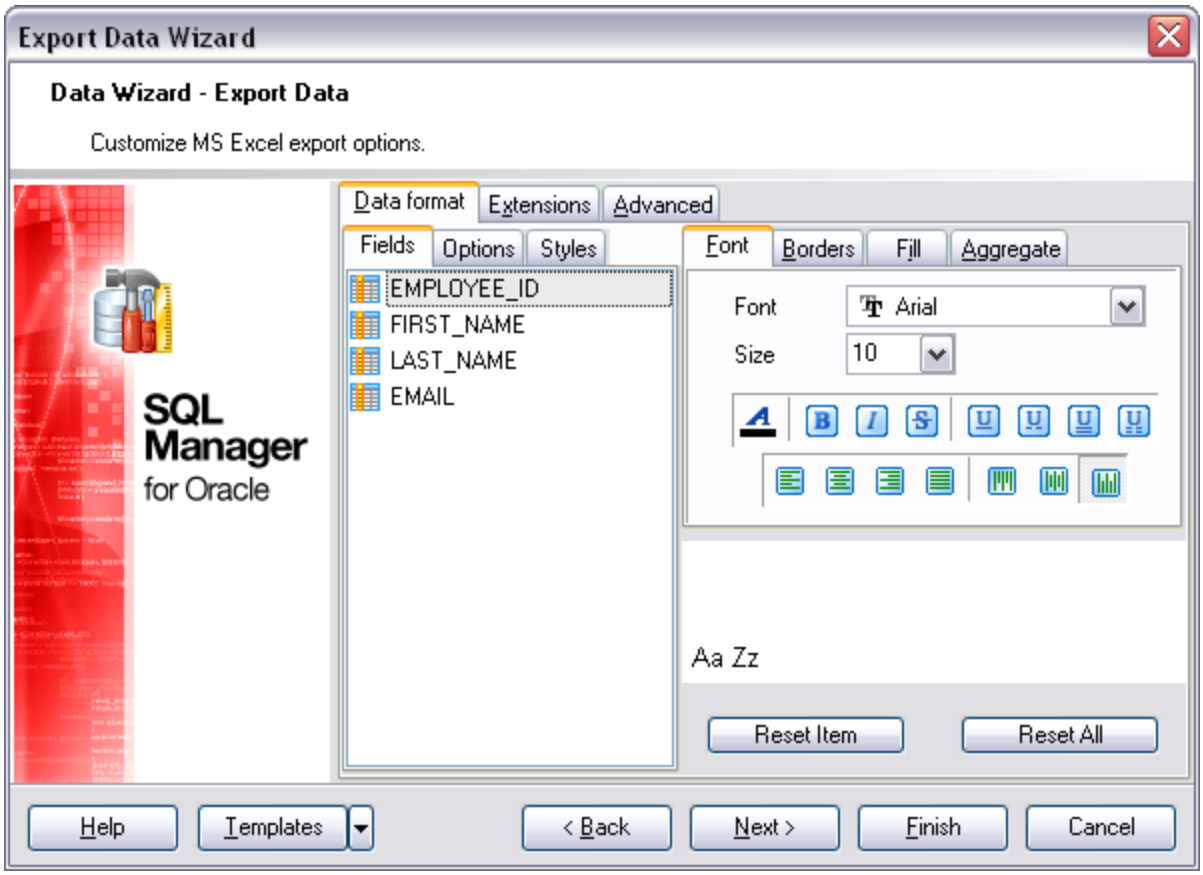

8.1.5.1.1 Data format

The **Data Format** tab contains general options, which allow you to adjust the format for each kind of Excel cells. This means that you can specify such parameters as font, borders, filling color and method, etc. for each entity (such as data field, header, footer, caption, data, hyperlink and so on) separately. Also it is possible to create styles to make target Excel file be striped by columns or rows (the **Styles** tab).

- Fields
- Options
- Styles

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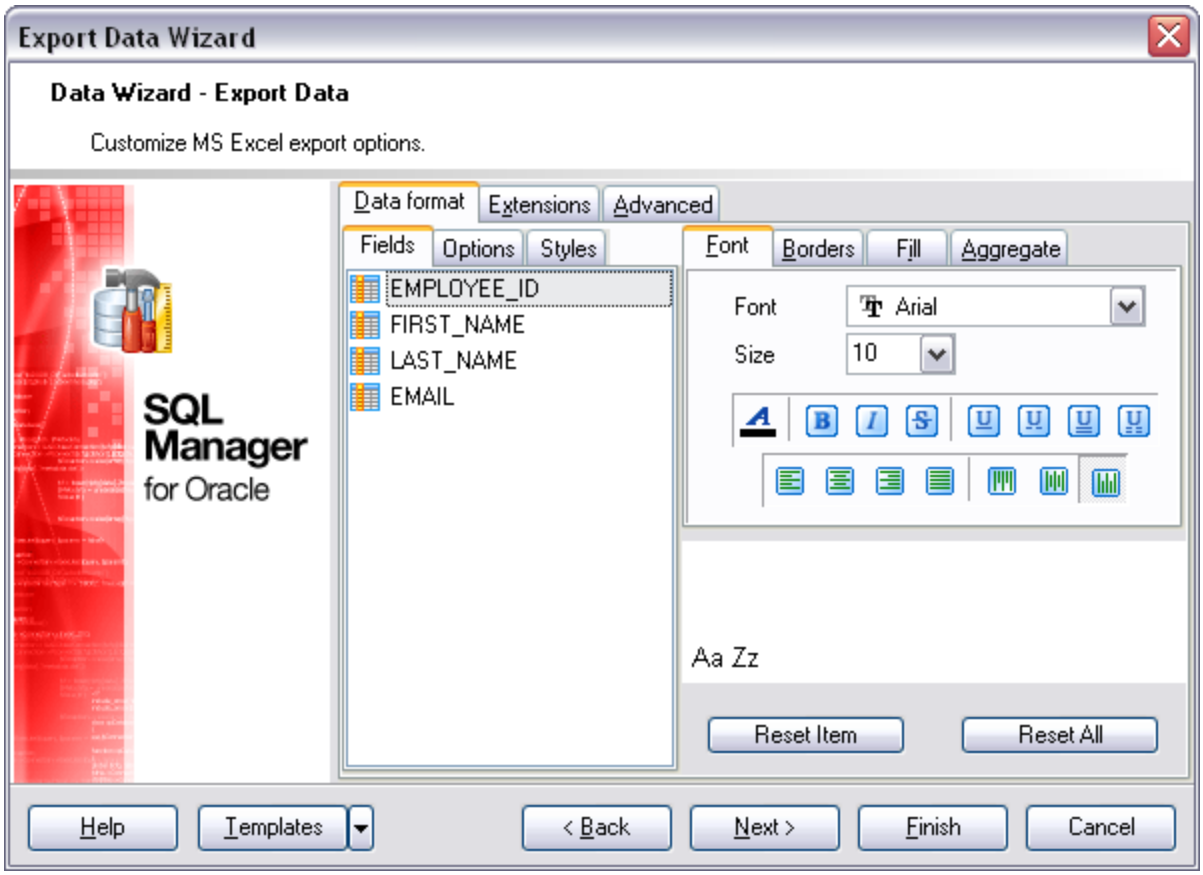

8.1.5.1.1.1 Fields

On this tab you can set font options, border and fill options and select and aggregate functions for all the **fields** you want to export. You can reset settings at any time using buttons **Reset Item** and **Reset All**.

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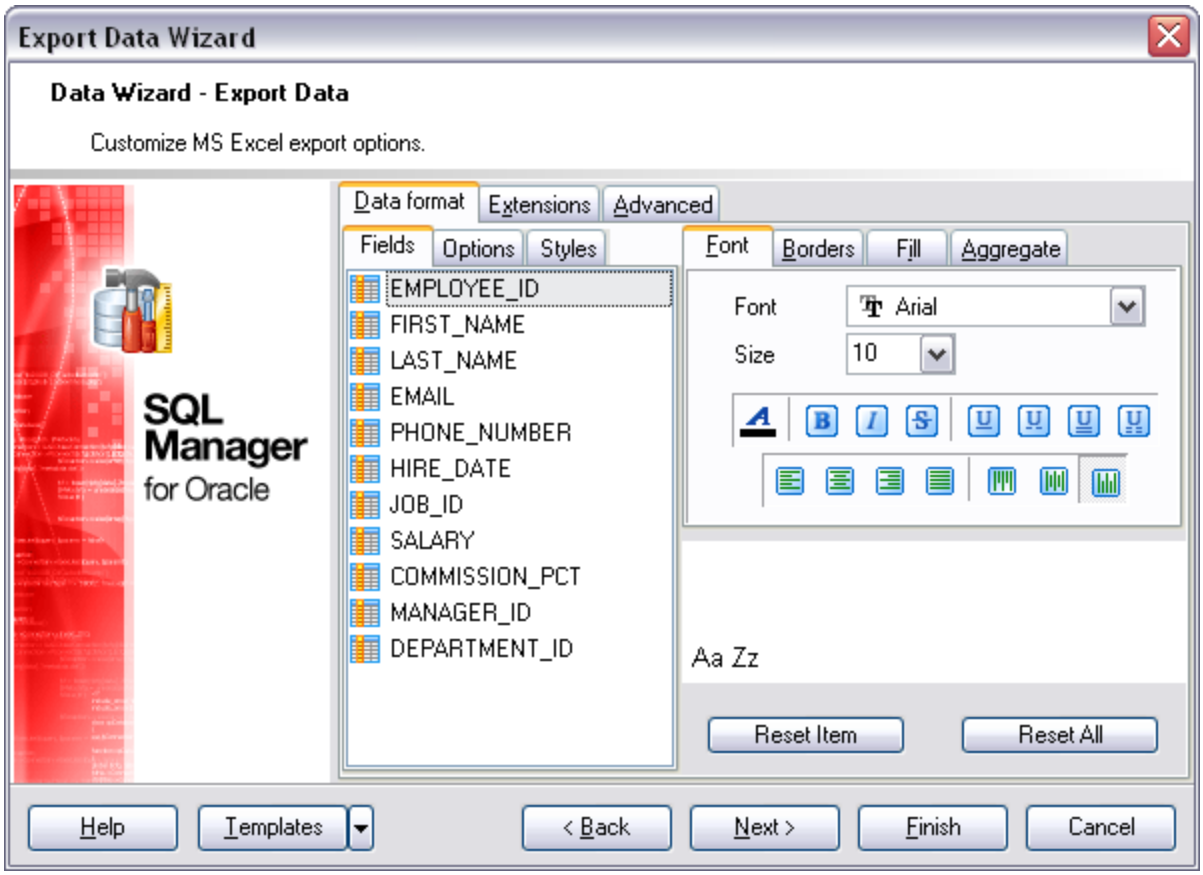

8.1.5.1.1.2 Options

On this tab you can set font options, border and fill options for all **elements** of the Excel sheet (header, caption, footer, aggregates and hyperlinks). You can reset settings at any time using buttons **Reset Item** and **Reset All**.

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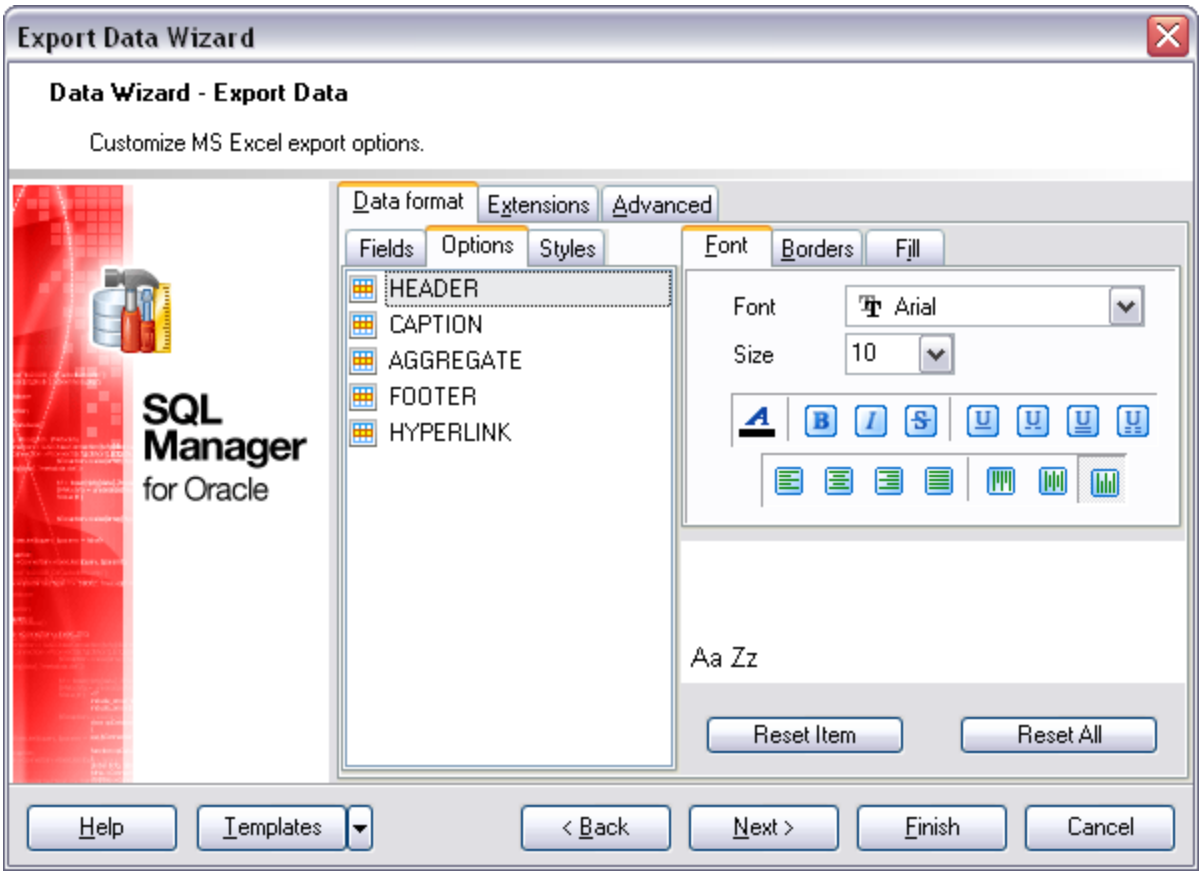

8.1.5.1.1.3 Styles

On this tab you can make a style template: set font options, border and fill options and save them. You can reset settings at any time using buttons **Reset Item** and **Reset All**.

If you have created or loaded more than one style template, they could be ignored, or used column-by-column or row-by-row (it depends on strip style setting at the bottom).

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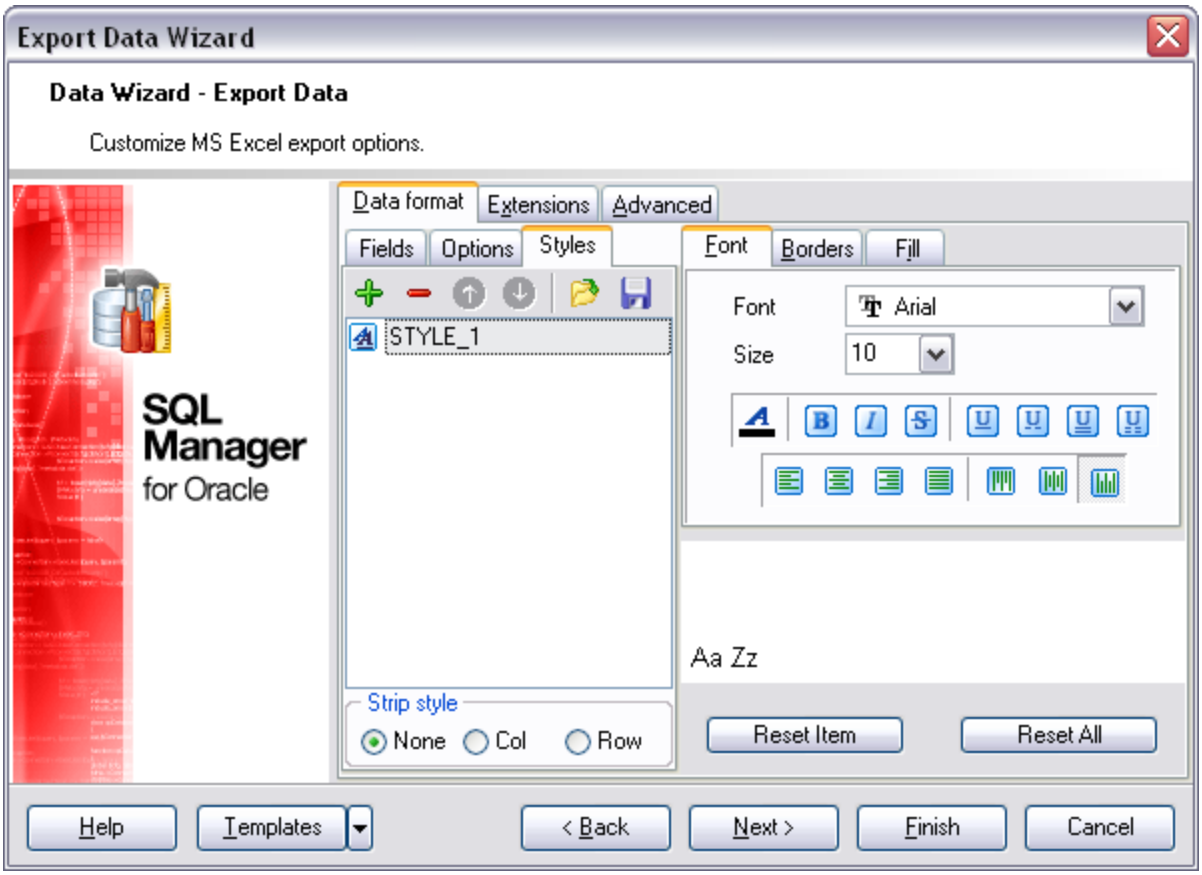

8.1.5.1.2 Extensions

Extensions tab provides an ability to add hyperlinks and notes and to any cell of target file, to specify a value of a cell, to create a chart and to merge cells. Click **Plus** button to add add an element. Click **Minus** button to delete an element.

- Hyperlinks
- Notes
- Charts
- Cells
- Merged Cells

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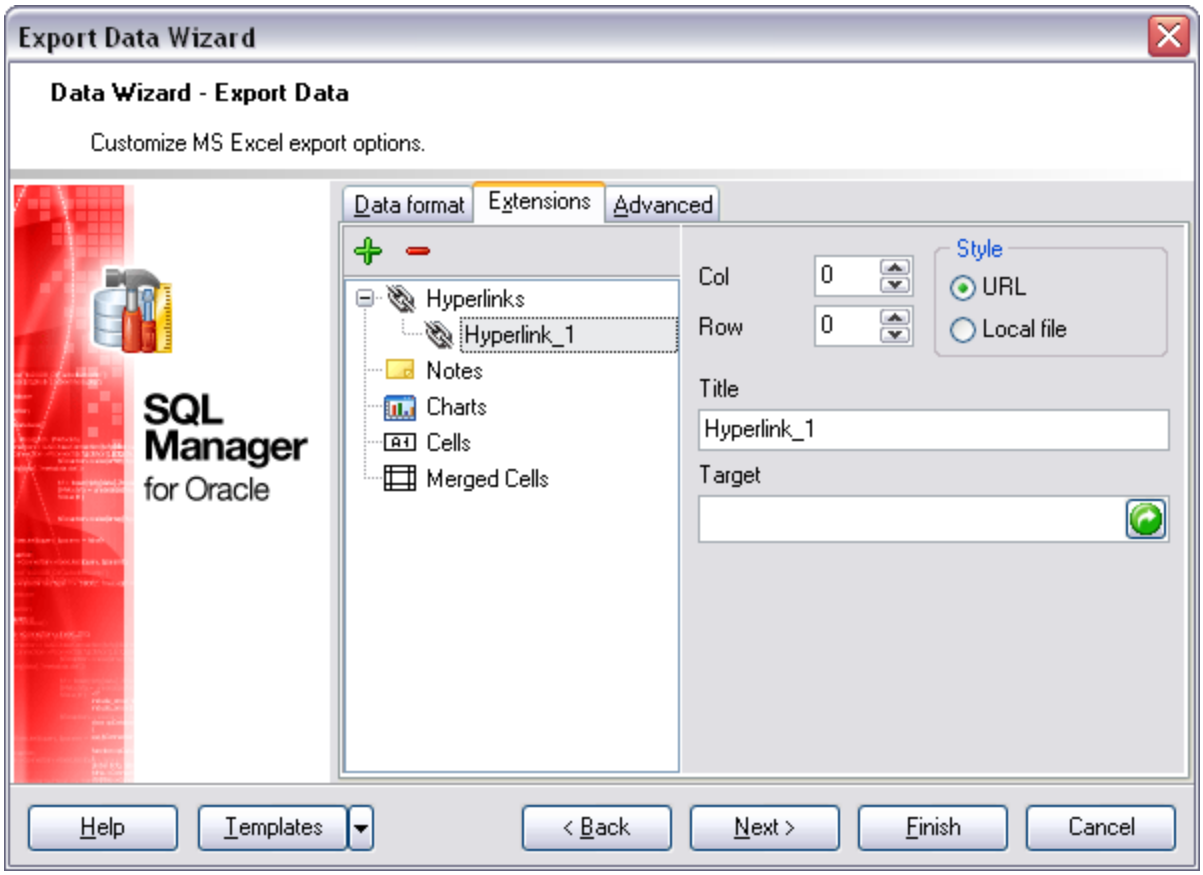

8.1.5.1.2.1 Hyperlinks

If you create a hyperlink:

- choose cell coordinates
- select if this is a local hyperlink or not
- enter its title
- specify its target

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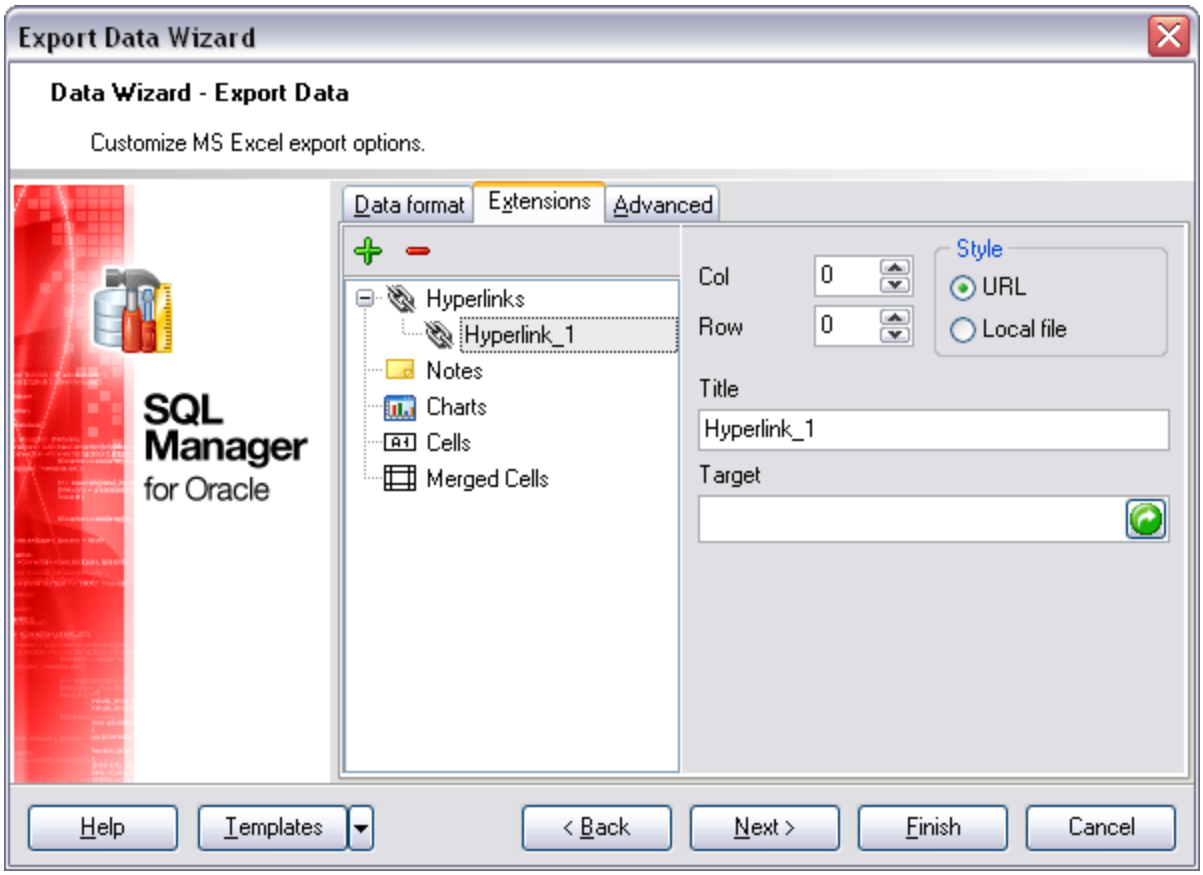

8.1.5.1.2.2 Notes

If you create a note:

- choose cell coordinates
- enter text of a note for that cell
- select font and fill properties using appropriate tabs

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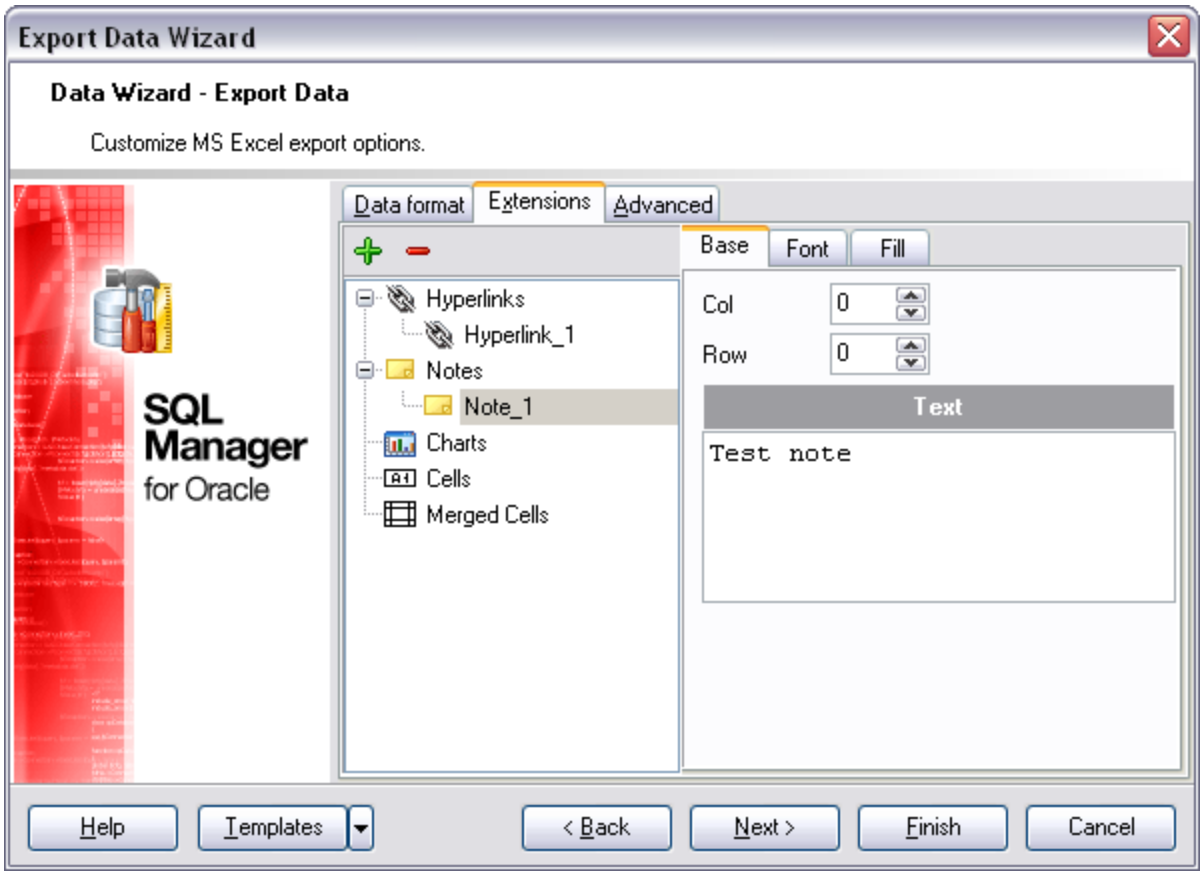

8.1.5.1.2.3 Charts

if you create a chart:

- enter chart title
- select chart style
- choose legend position
- specify if you want to show legend
- specify if you want to set chart color automatically
- select chart position and category labels using appropriate tabs

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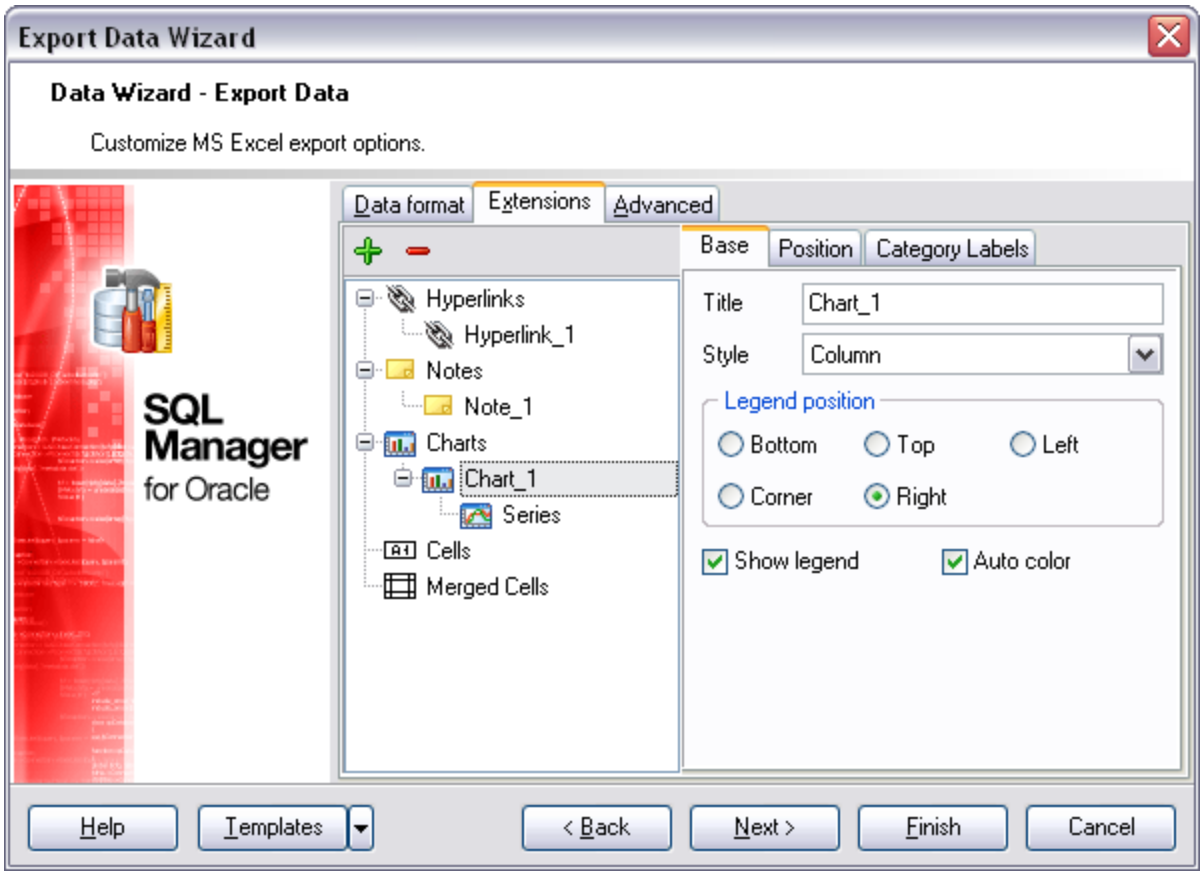

- add one or more series
- enter its' titles
- select data ranges (from a chosen column or from a specified range in a table)
- choose colors for all the graphs

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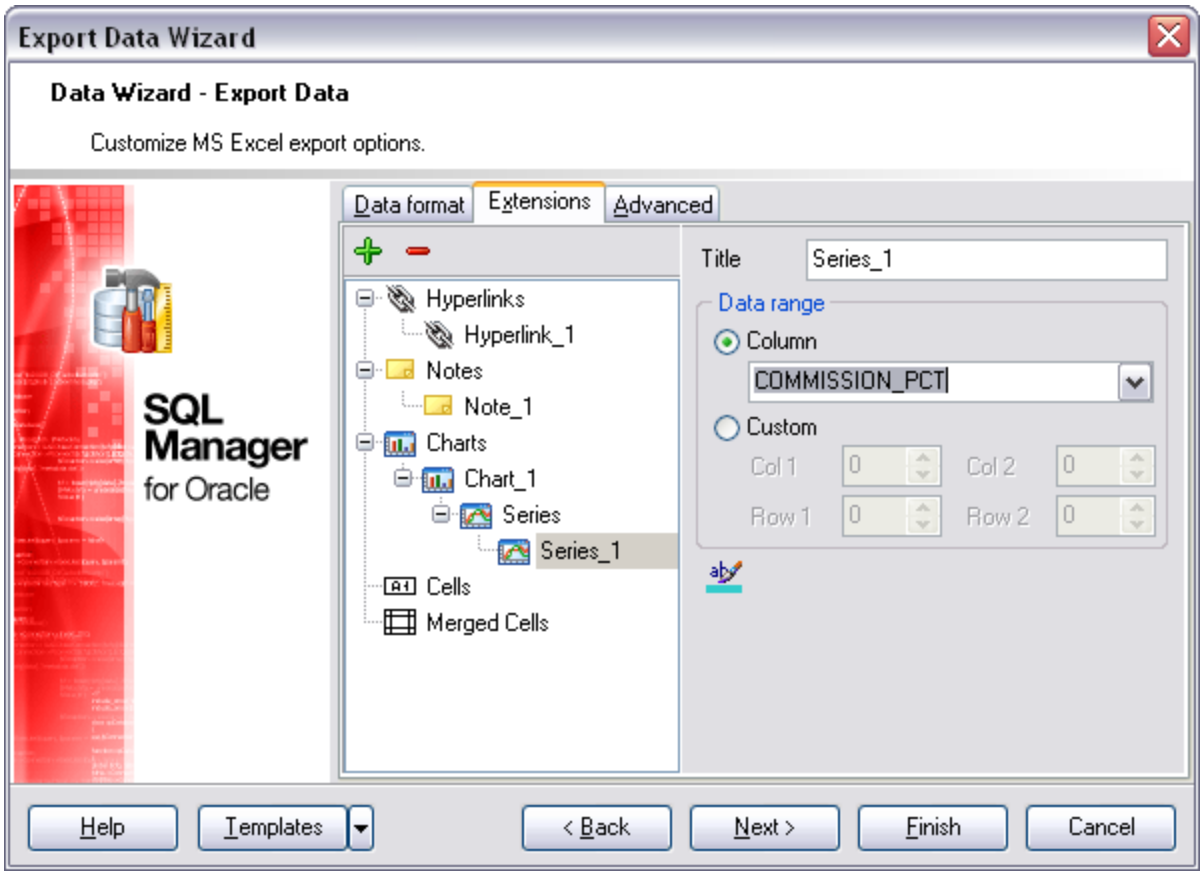

8.1.5.1.2.4 Cells

If you want to add a value in a specific cell:

- choose cell coordinates
- select cell type
- enter its value
- if you are adding numeric or date/time value, you can set cell format

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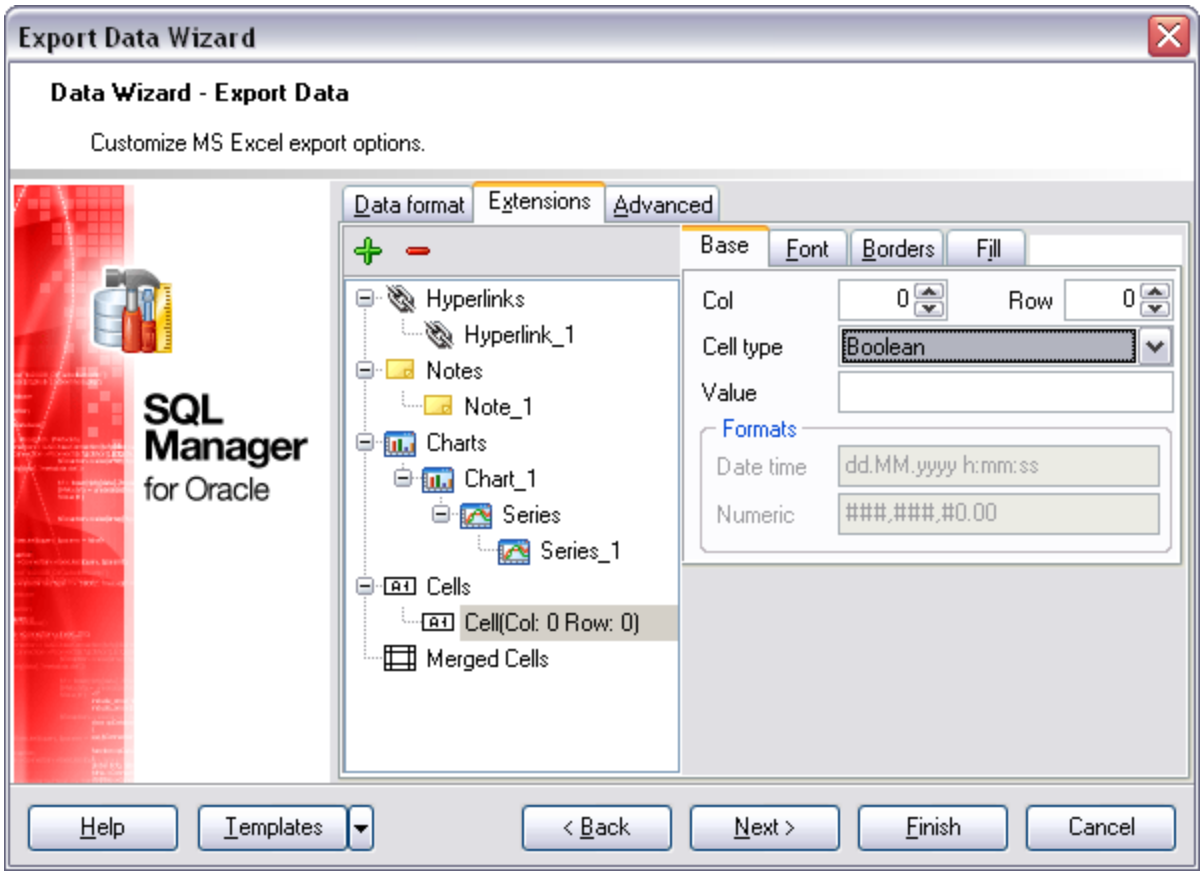

8.1.5.1.2.5 Merged Cells

If you want to merge some cells:

- set the range to merge

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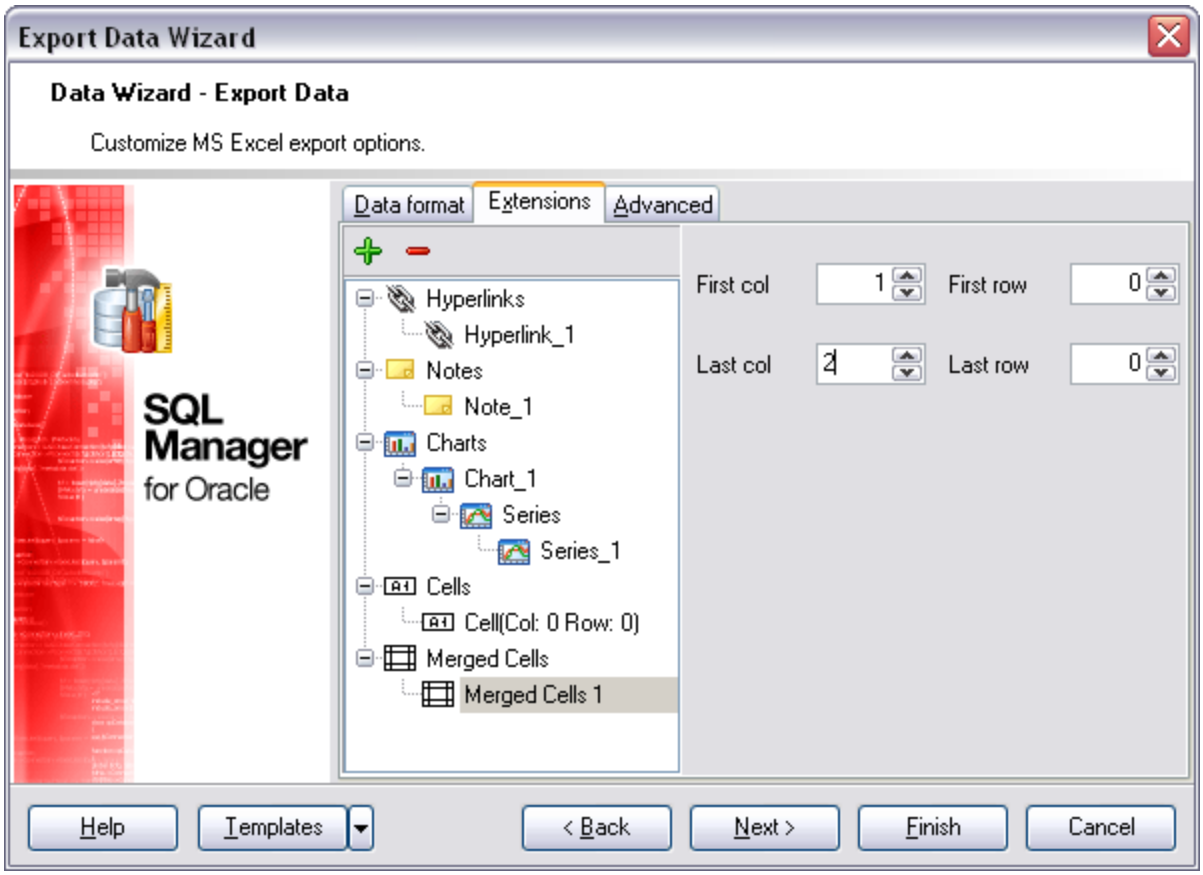

8.1.5.1.3 Advanced

Advanced options allow you to:

- Specify page header
- Specify page footer
- Specify sheet title in target file
- Choose a picture to be a page background

☑ **Calculate column width automatically**
This option allows wizard to determine column width in target file automatically.

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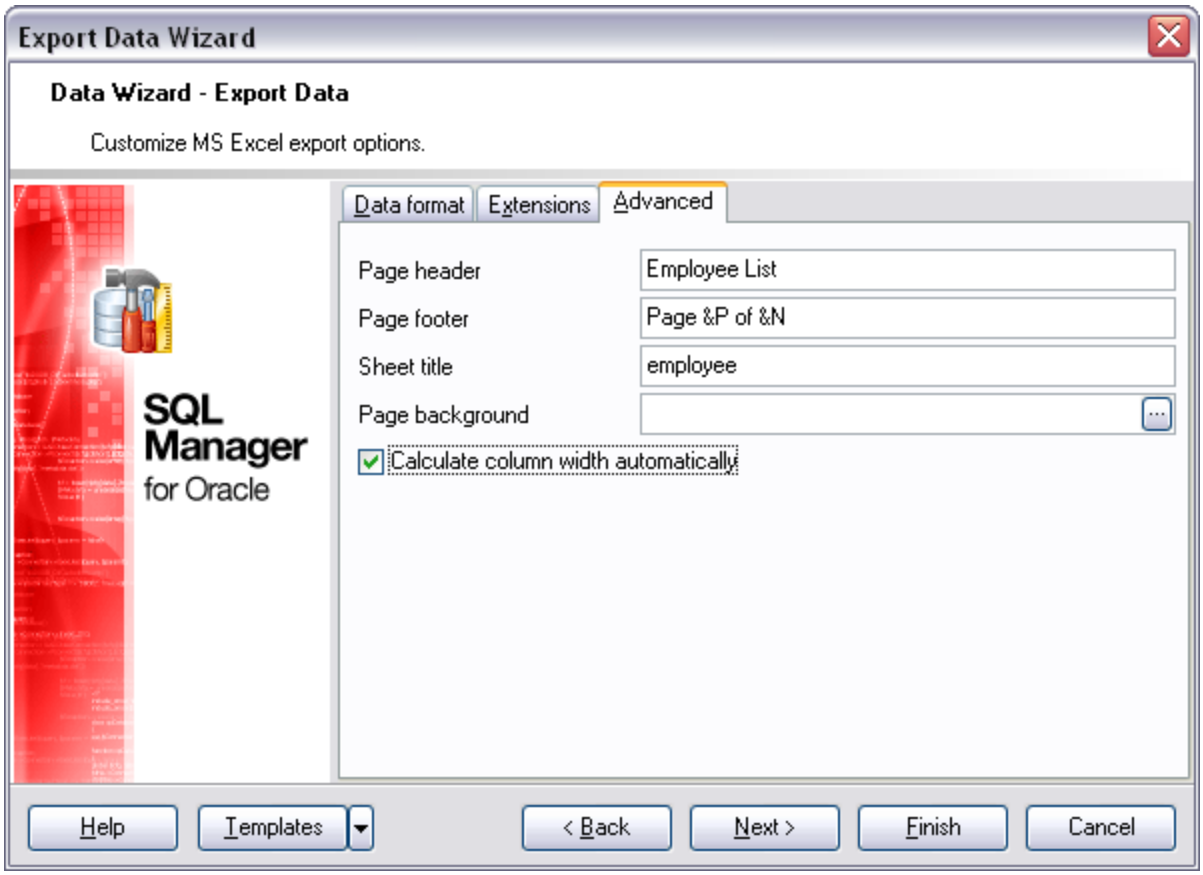

8.1.5.2 Access options

This step allows you to customize options for target MS Access file. Set the name for target table and specify whether the wizard should create a new table in Access database if it does not exist yet, or use the existing table to export data into.

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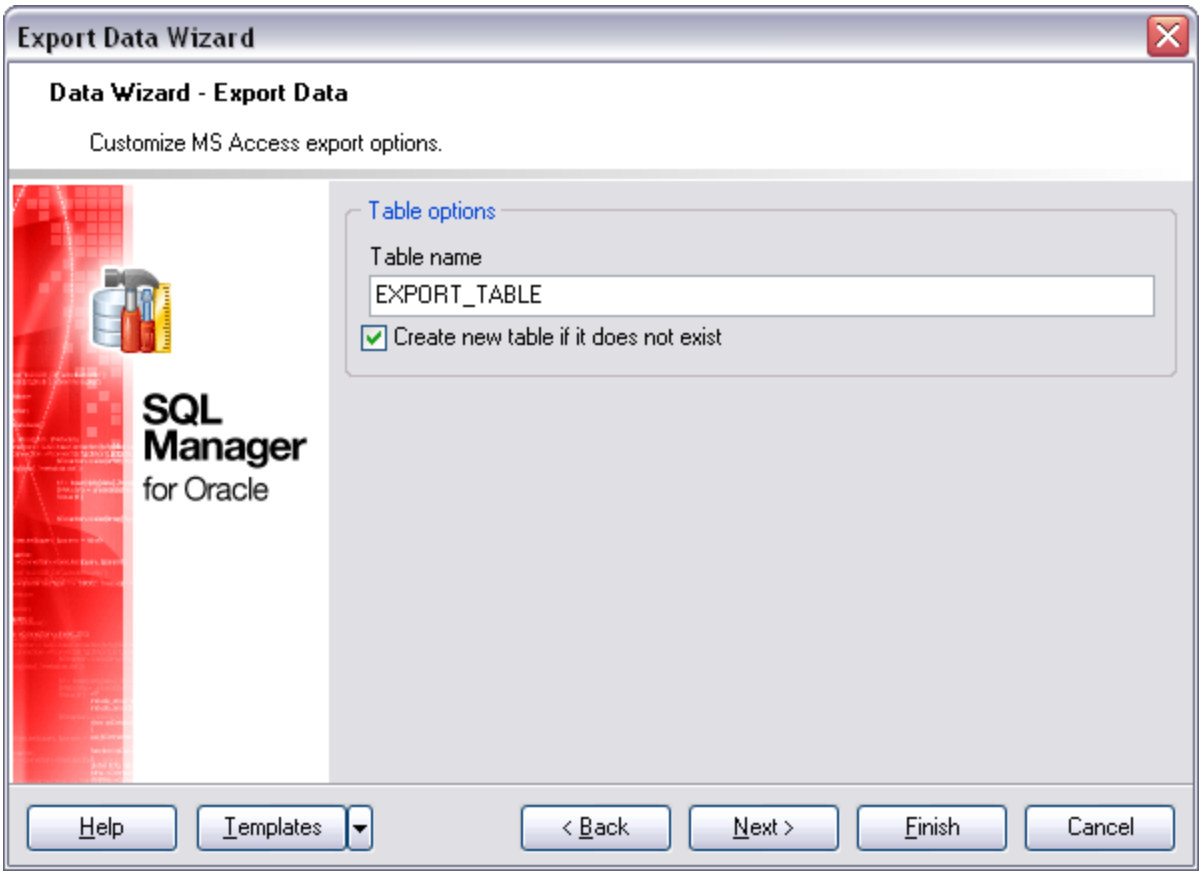

8.1.5.3 Word / RTF options

This step allows you to customize options for target MS Word/RTF file.

- Base Styles
- Strip Styles

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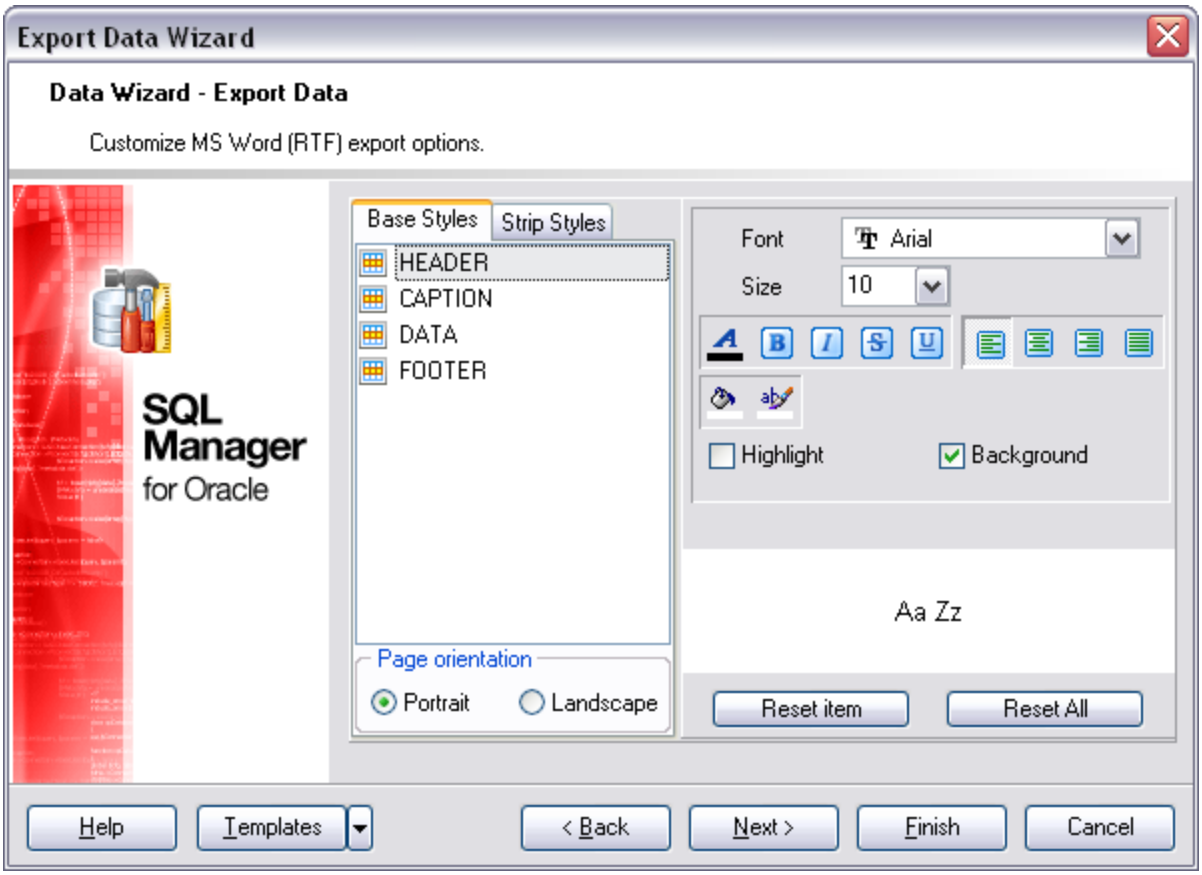

8.1.5.3.1 Base Styles

Base styles tab contains the list of target file entities, such as table header, data, etc. You can customize style options, such as font name and size, background and foreground colors, text alignment and so on, for each of them by clicking the corresponding item in the list and setting the options for it in the right-side panel. All the changes you make with current style are represented in the **Sample Cell** panel. You can reset settings at any time using buttons **Reset Item** and **Reset All**.

You can also choose page orientation for target Word/RTF file on this tab.

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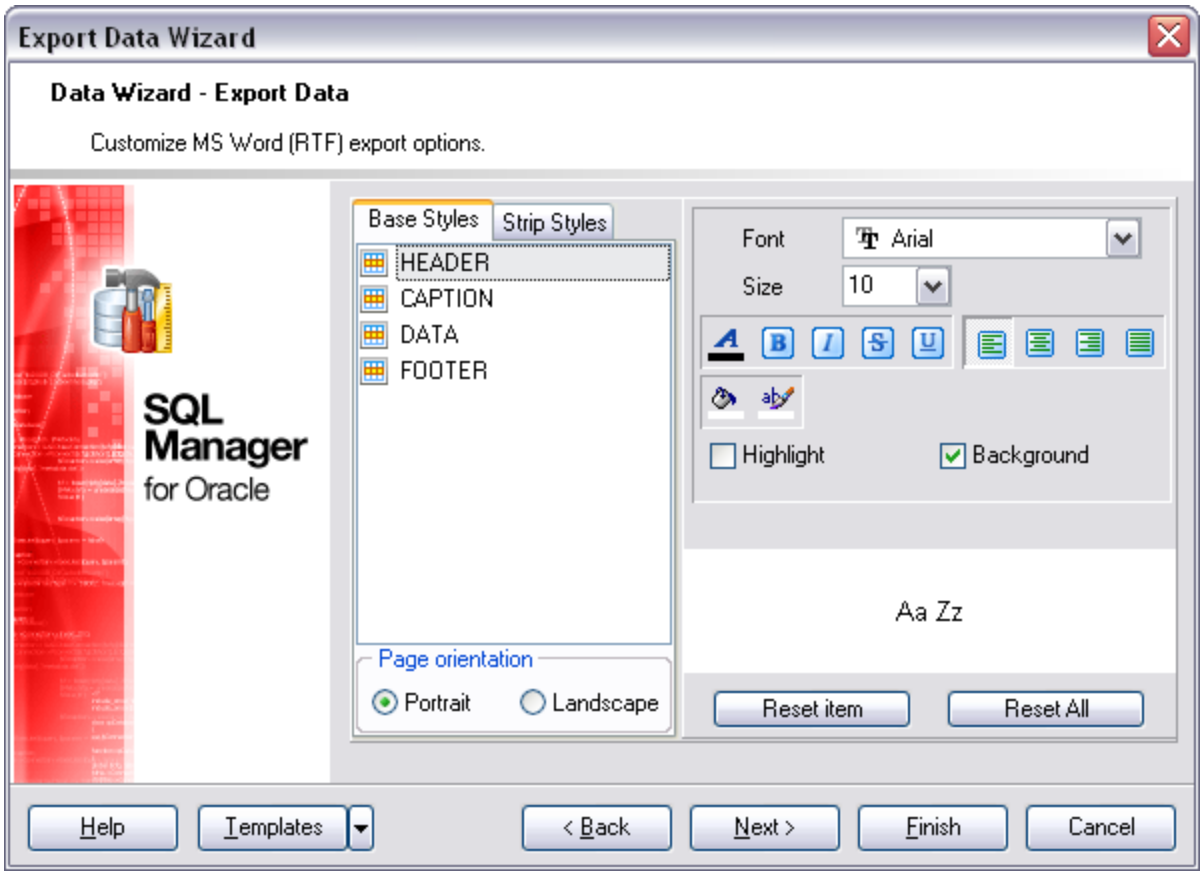

8.1.5.3.2 Strip Styles

On this tab you can make a style template: set font options, border and fill options and save them. You can reset settings at any time using buttons **Reset Item** and **Reset All**.

If you have created or loaded more than one style template, they could be ignored, or used column-by-column or row-by-row (it depends on strip style setting at the bottom).

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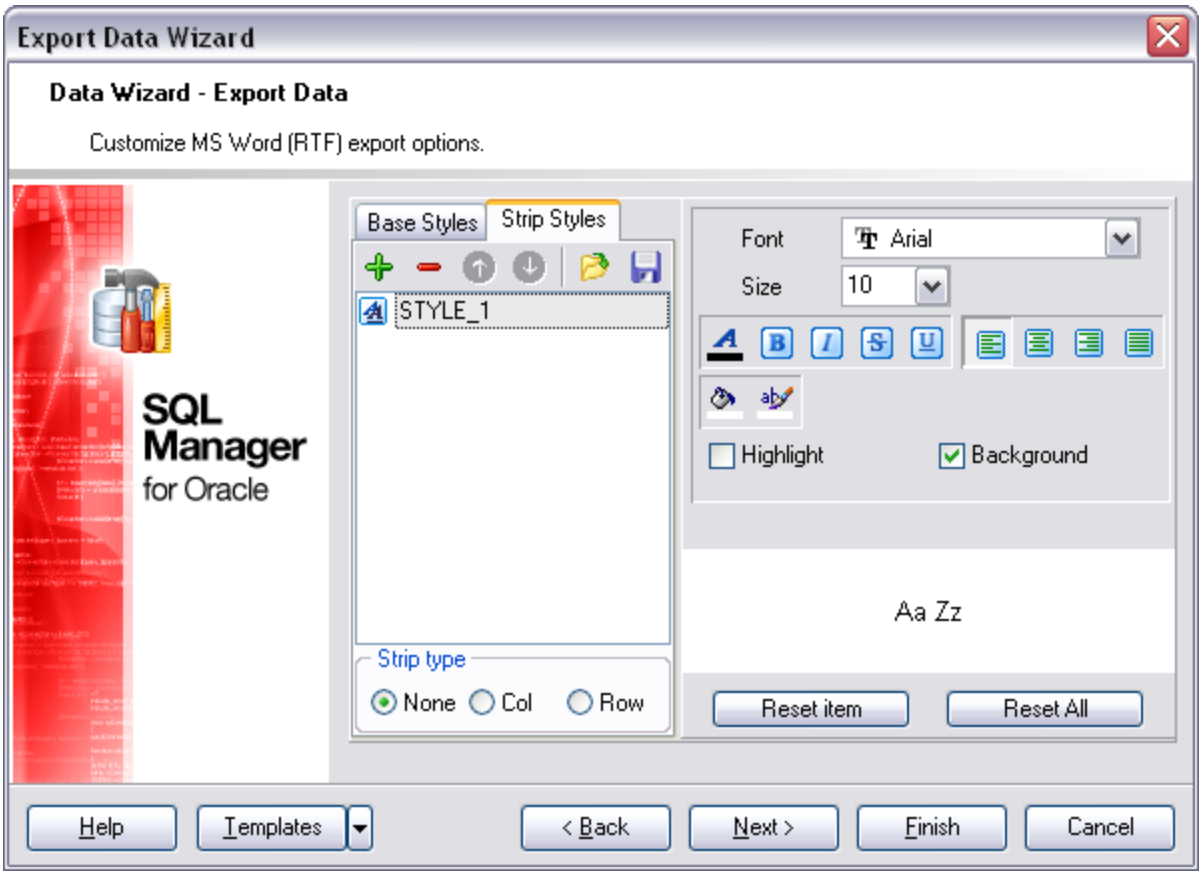

8.1.5.4 HTML options

This step allows you to customize options for target HTML file.

- Preview
- Basic
- Multi-file
- Advanced

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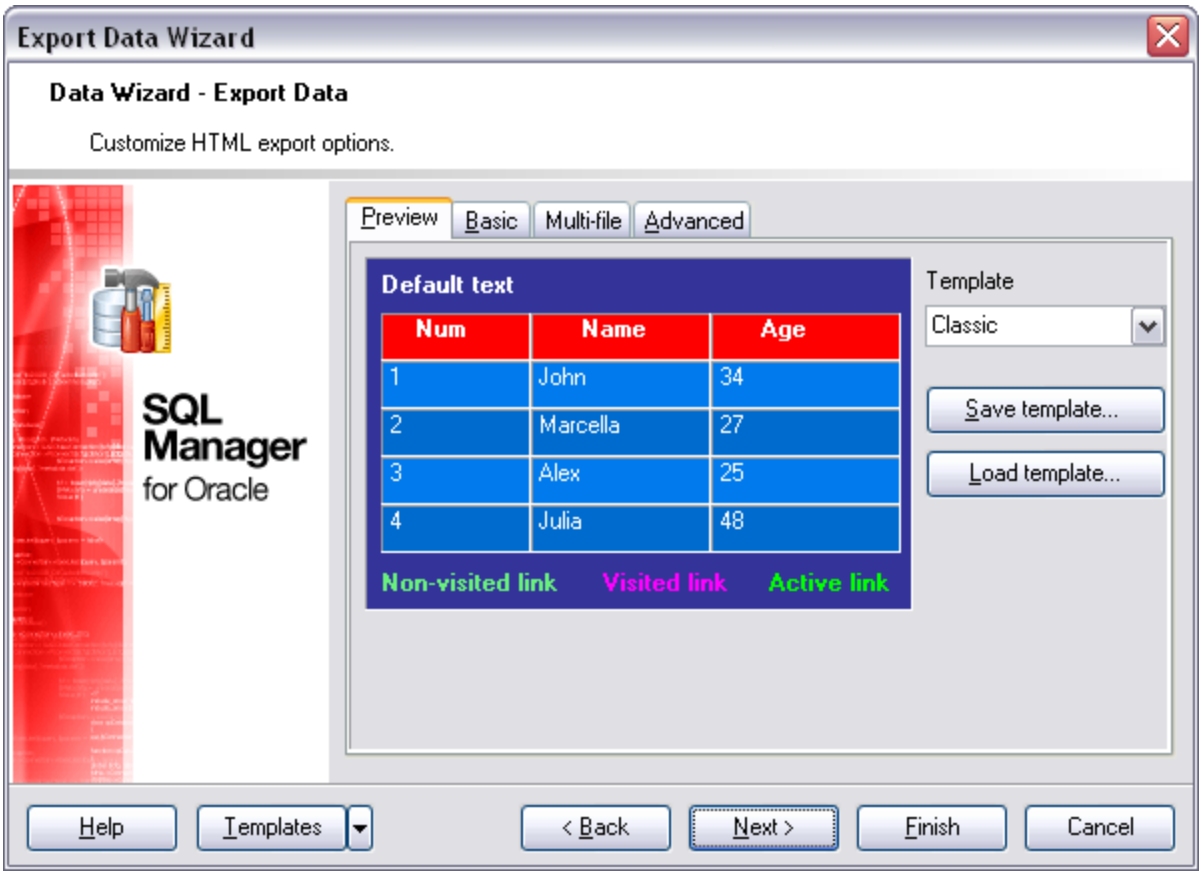

8.1.5.4.1 Preview

Preview tab allows you to select style of HTML file from a number of built-in templates provided by the **Templates** combo box. You can choose any of these templates, customize it by clicking on objects in the preview panel, and save it as a custom template using **Save template** button. Use **Load template** button to load previously saved custom templates from hard disk. Click on an element of a table to select a color.

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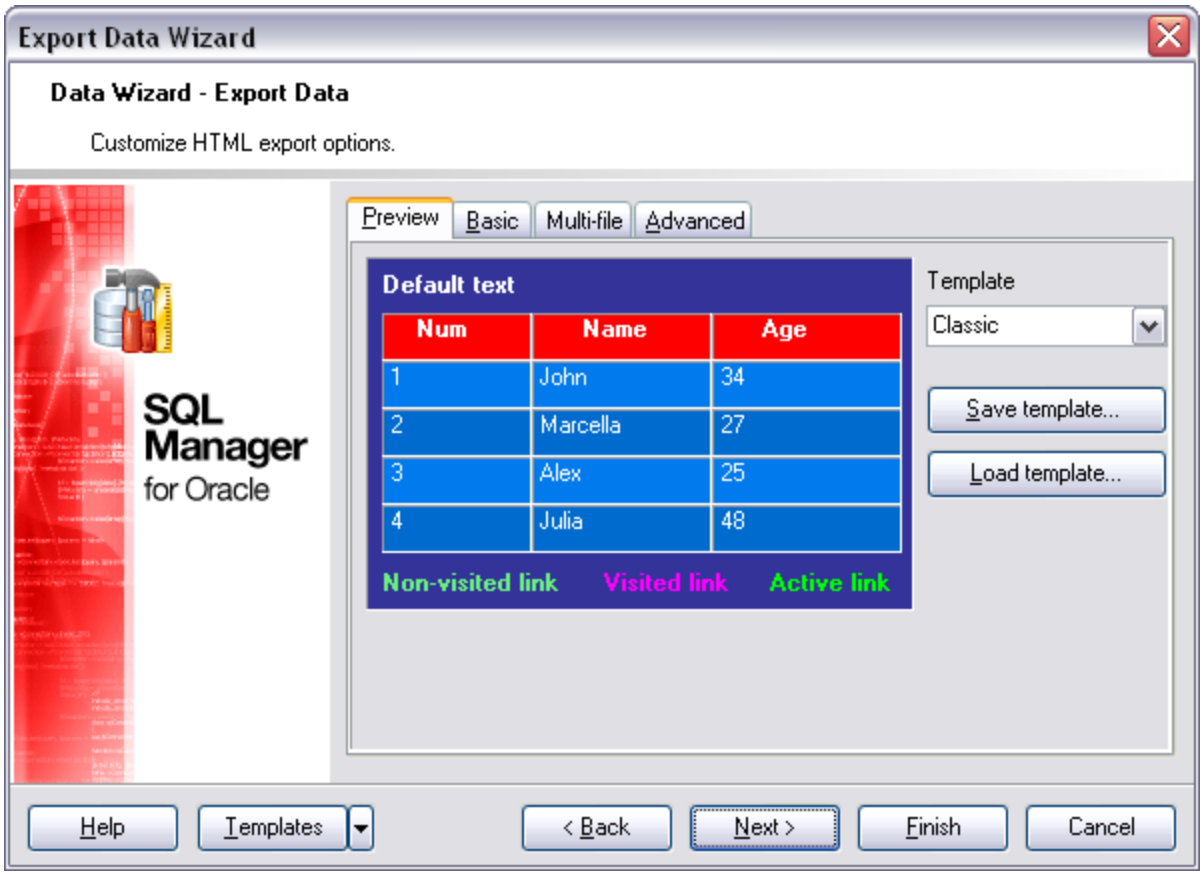

8.1.5.4.2 Basic

Basic tab allows you to specify basic parameters of target HTML file. You can:

- specify title of a result file
- select if CSS should be internal or external (in a specified .css file)
- select if want to export boolean fields of a table as HTML check boxes.

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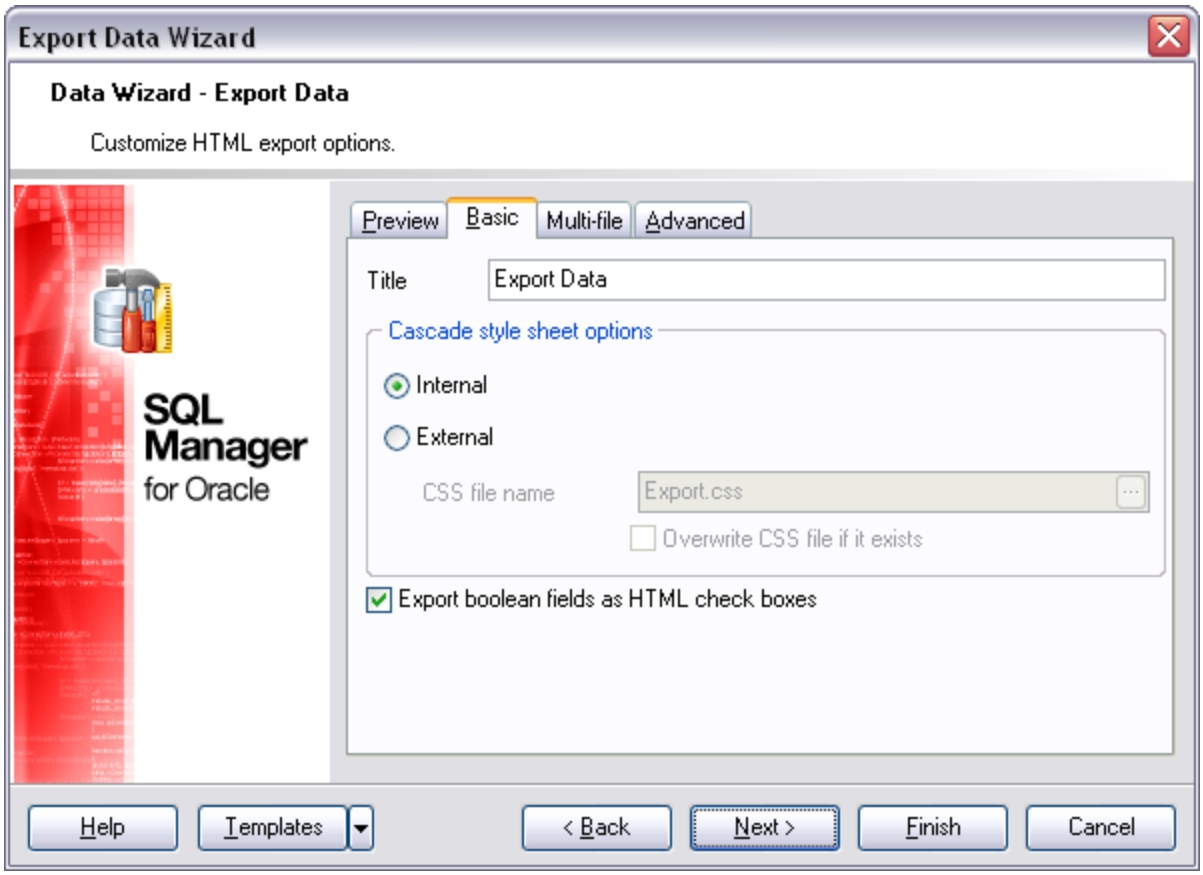

8.1.5.4.3 Multi-file

Multi-file tab provides you with an ability to split target HTML file into several separated files. This tab allows you to specify the record count for a single file, set an option to generate an index HTML file, and add an ability of navigation between each other to each of exported files.

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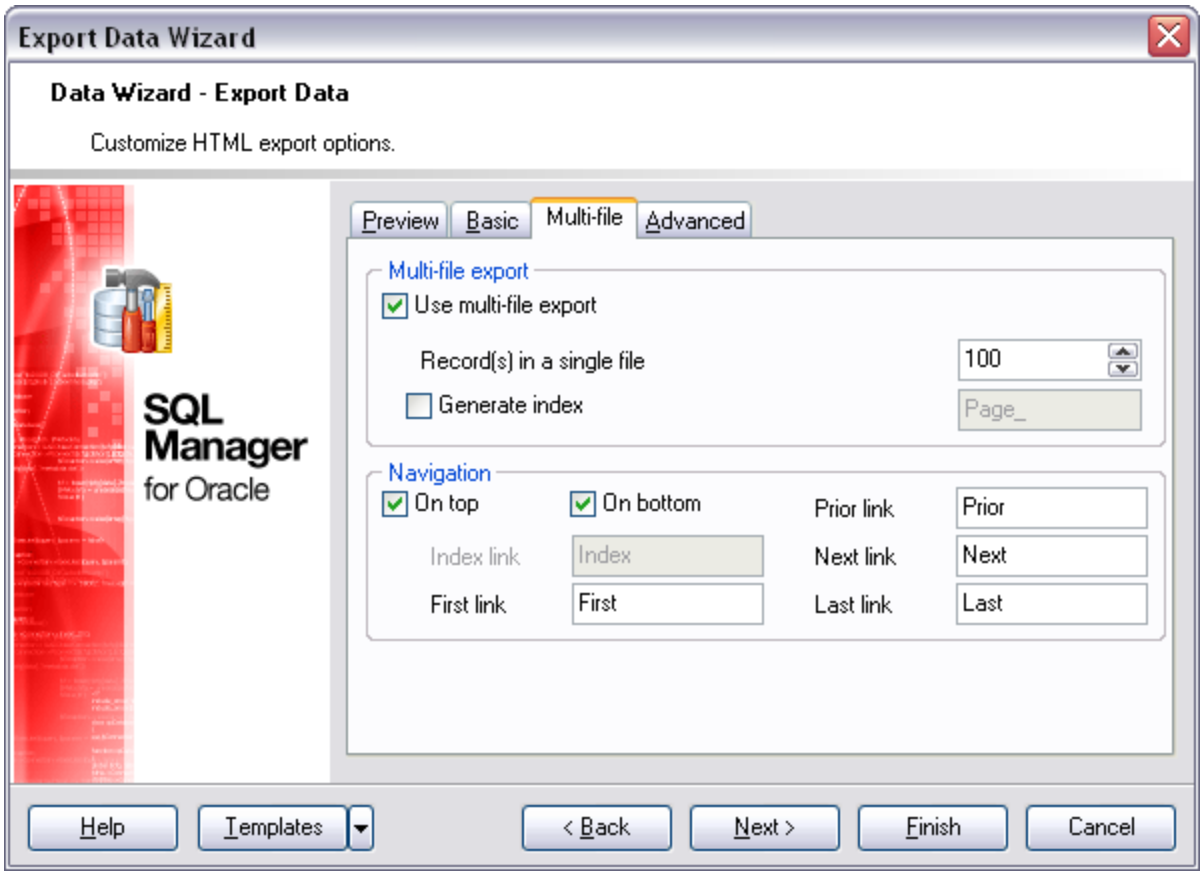

8.1.5.4.4 Advanced

The **Advanced** tab contains such HTML options as default font, background, cell padding and spacing, etc.

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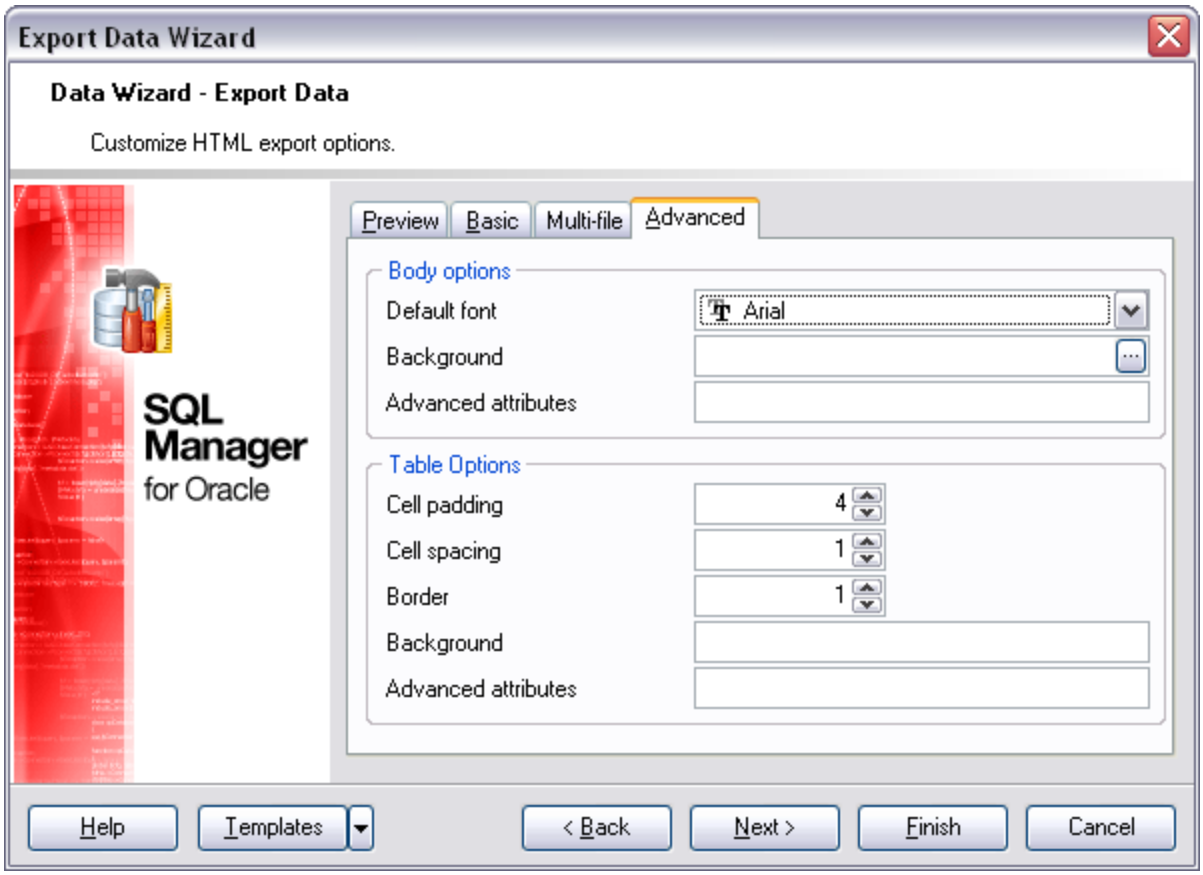

8.1.5.5 PDF options

This step allows you to customize options for target PDF file. On this step you can customize general options of target PDF file, such as fonts, page size, page margins, column/row spaces, line width, etc.

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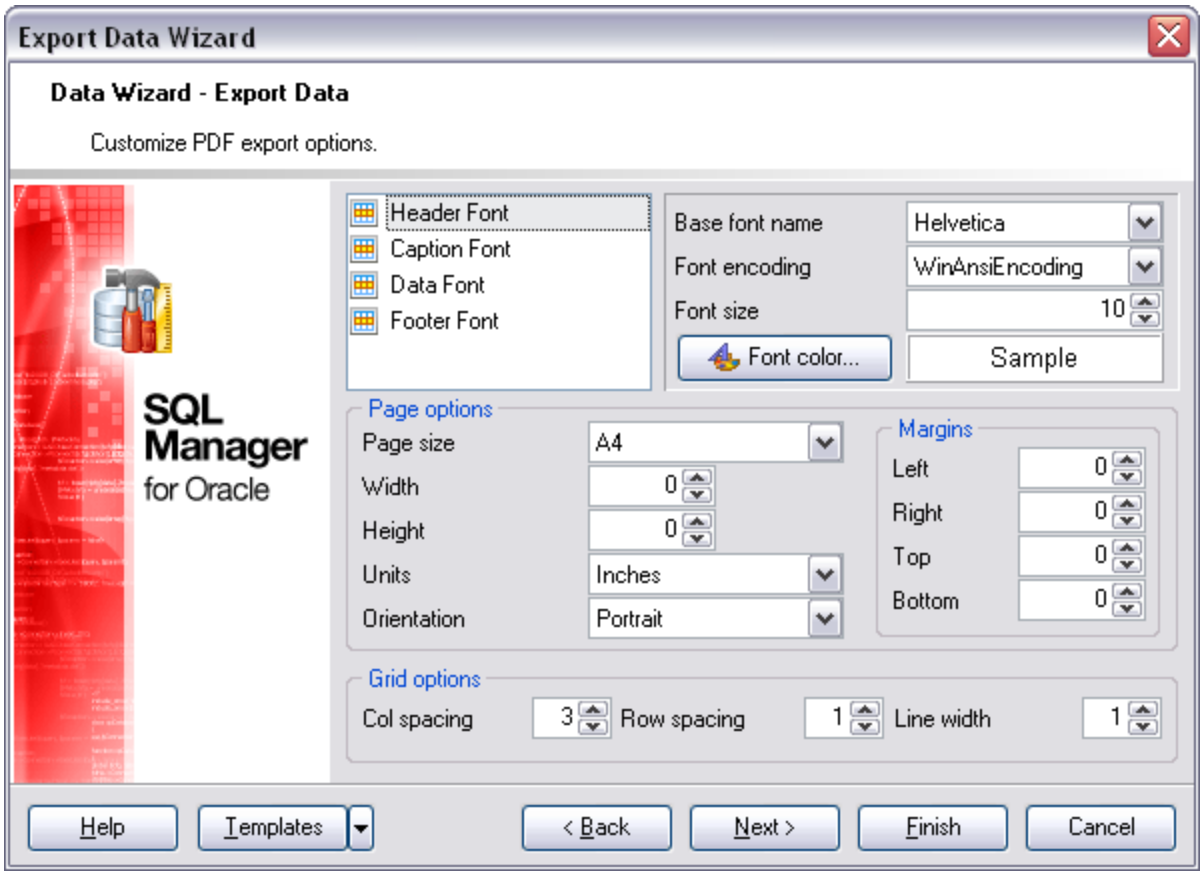

8.1.5.6 TXT options

This step allows you to customize options for target text file. Set the **Calculate column width** options on if you want each column of target file be adjusted to the maximum number of characters in it. The Spacing option specifies the number of spaces between columns in target file.

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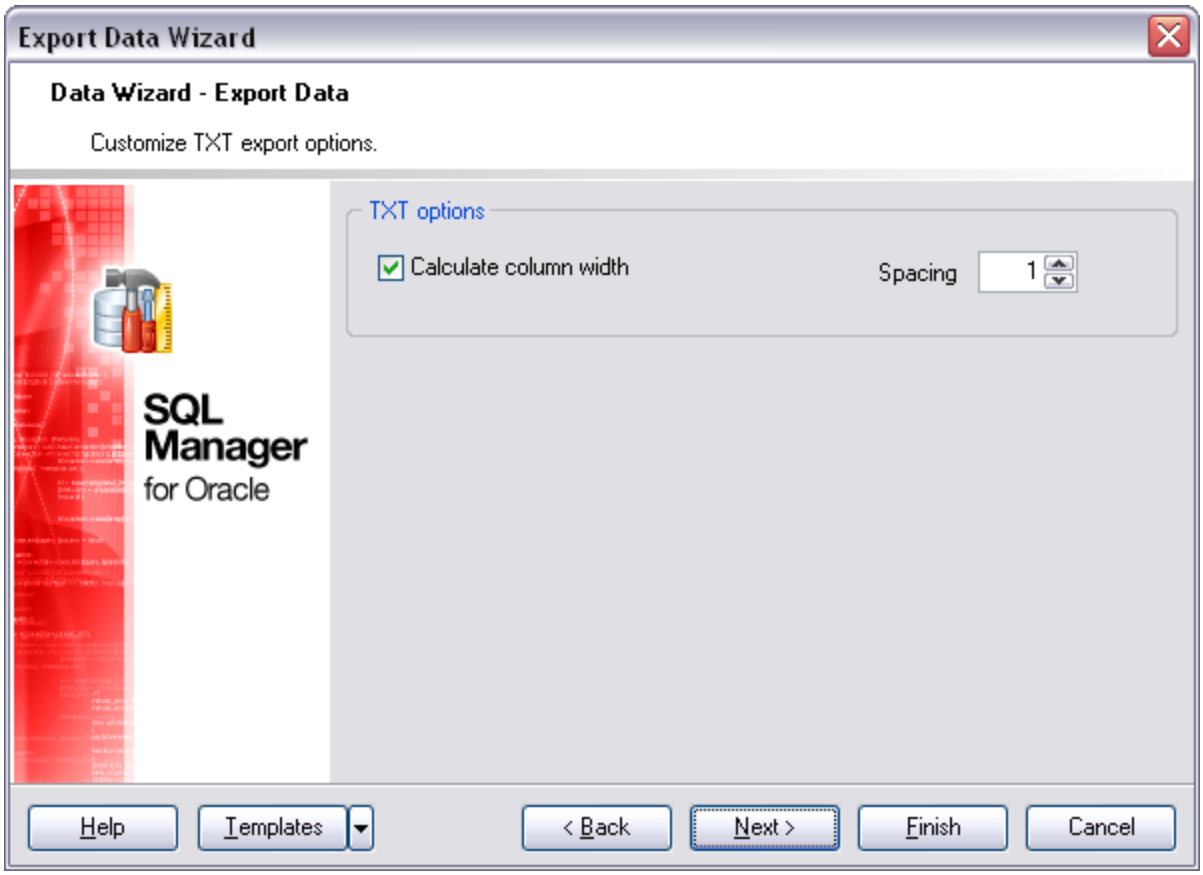

8.1.5.7 CSV options

This step allows you to customize options for target CSV file. You can specify column separator and optional values quote character for target file on this step.

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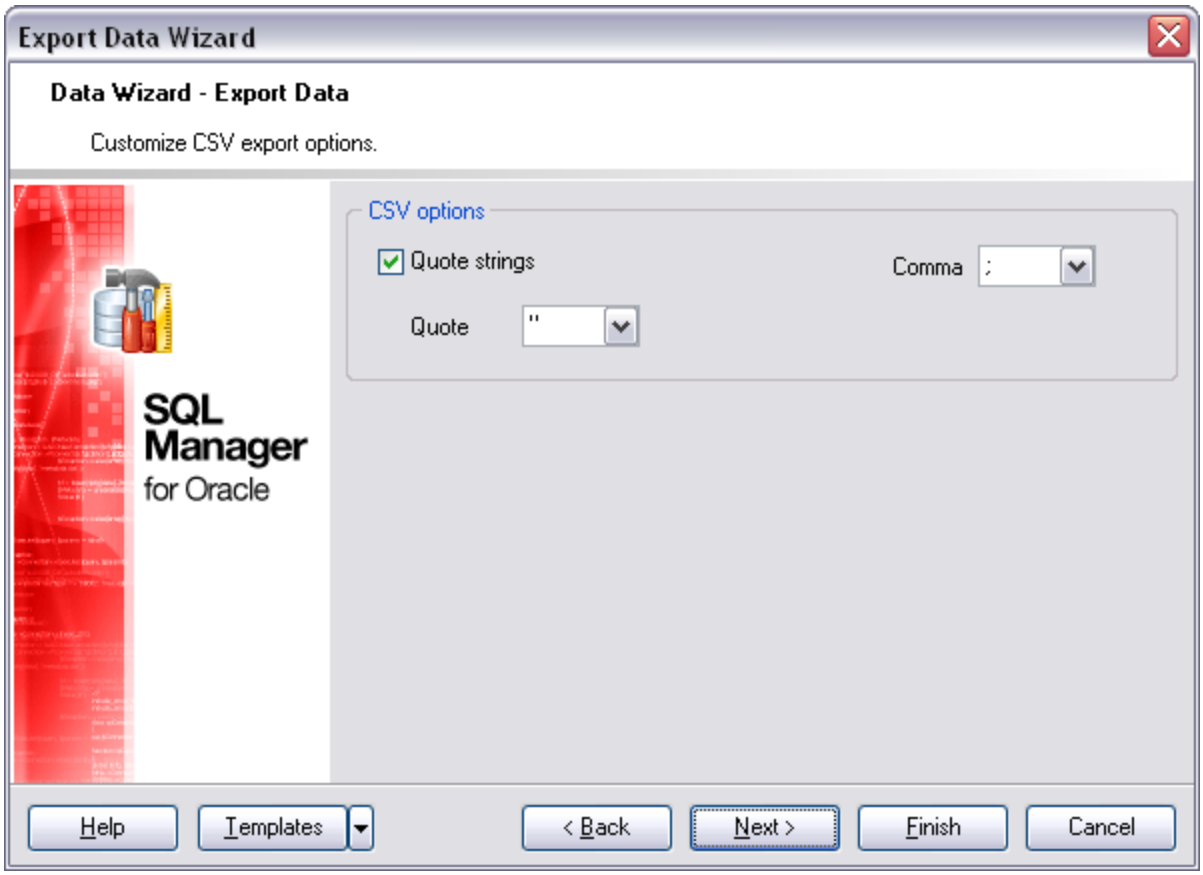

8.1.5.8 XML options

This step allows you to customize options for target XML document. Specify XML document encoding in the Encoding edit box and set the Standalone option on if you wish target document to be standalone.

Note that export is only possible from XML-Datapacket (CDS) format. Conversion between generic XML documents and the data packets that are used by SQL Manager 2007 for Oracle can be performed with the help of XML Mapper by Borland (R).

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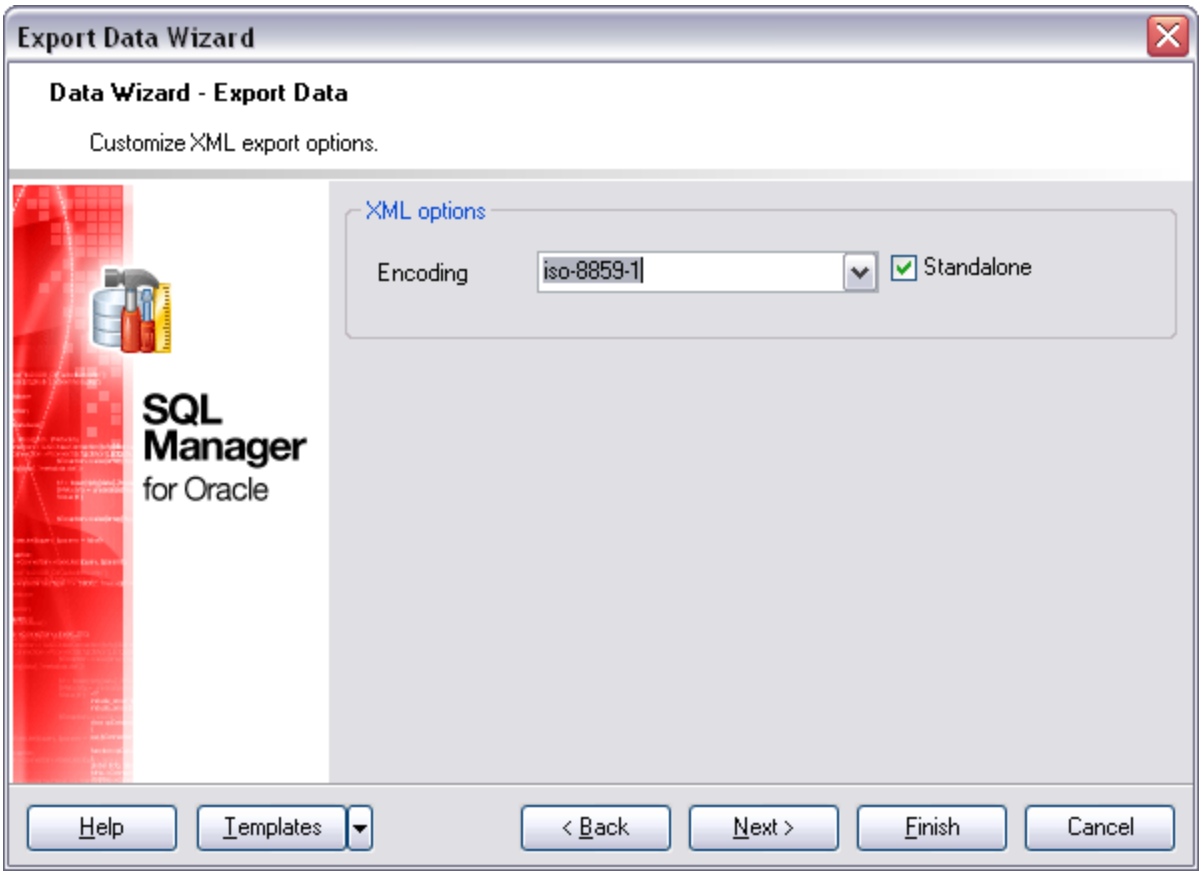

8.1.6 Setting common export options

Set the common export options and click **Finish** button to start the export process. The detailed description of these options is given below.

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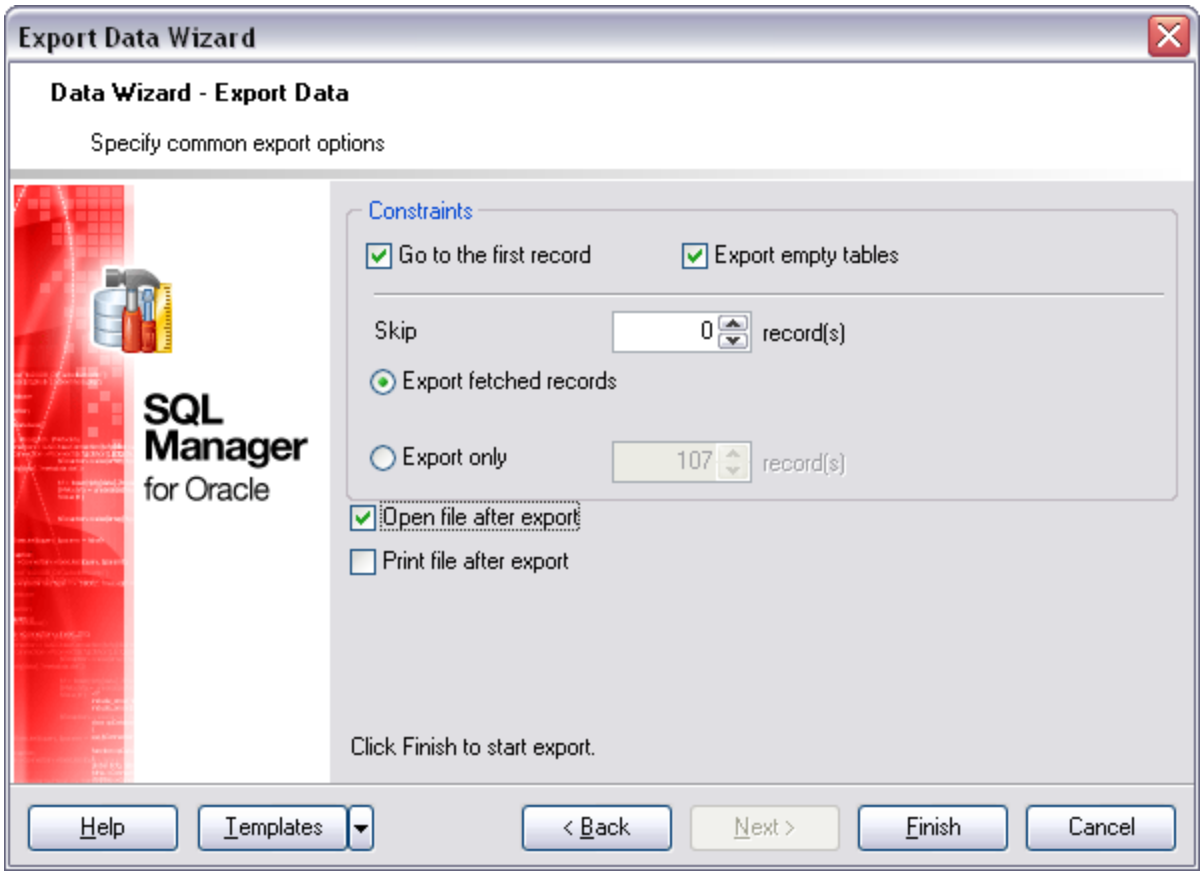

Go to the first record
If checked, starts export from the first record of the data set.

Export empty tables
If checked, allows you to export tables even if they are empty.

Skip
Specifies the number of records, which are skipped before export starts.

Export fetched records / Export only ... records / Export all records
Specifies the number of records to export: only records currently fetched, a fixed number of records or all records.

Open files after export
If checked, opens the result files in the associated program after export.

Print files after export
If checked, sends the result files to default printer after export.

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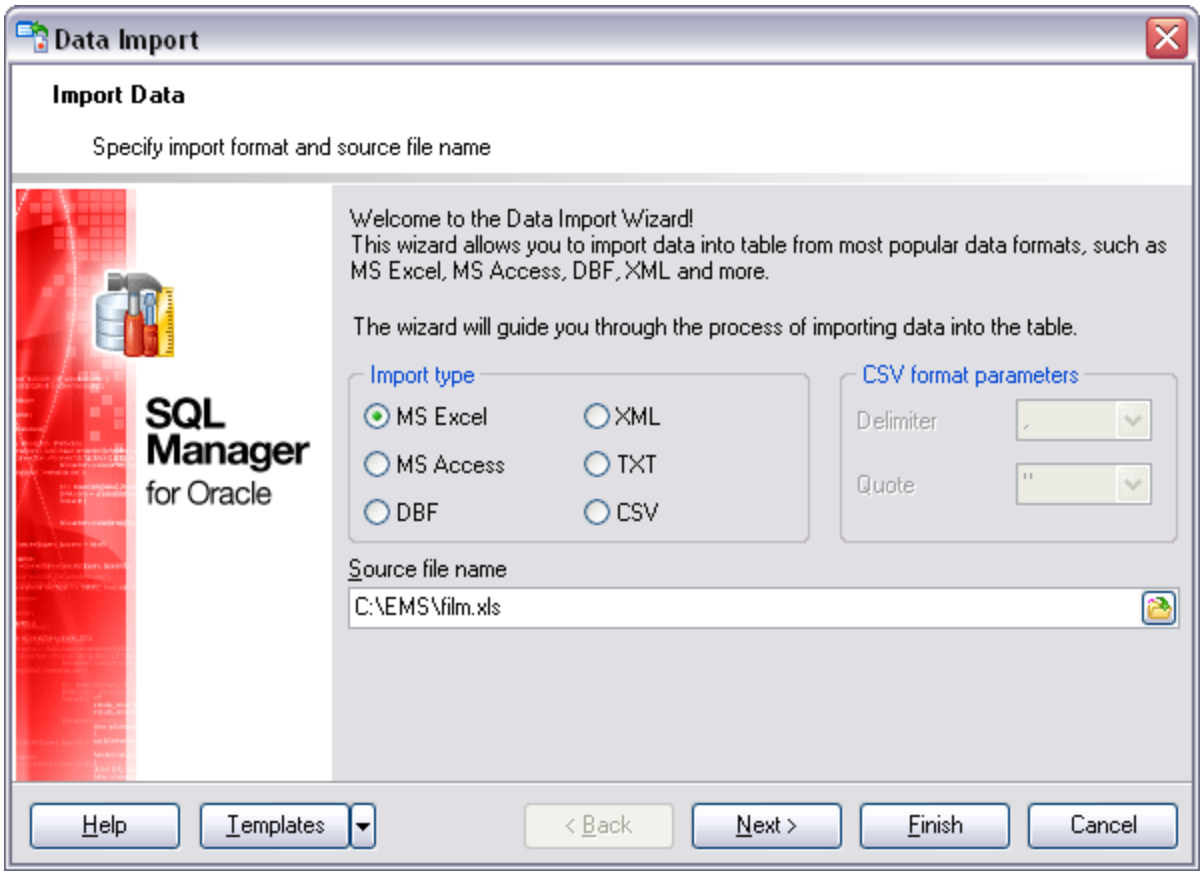
8.2 Import Data Wizard

Import Data Wizard allows you to import data to a table from MS Excel, MS Access, DBF, TXT or CSV file.

Setting source file name and format
Selecting source object for import data from
Setting the correspondence between the source and target fields
Adjusting common data formats
Setting advanced field formats
Setting import mode and data write type
Customizing common import options
Using templates

See also:
Export Data Wizard



8.2.1 Selecting source file name and format

Select the type of the source file: MS Excel, MS Access, DBF, XML, TXT, or CSV and select the source file name. The file name extension in the **Source file name** box changes according to the selected import type. Select the delimiter and quote characters

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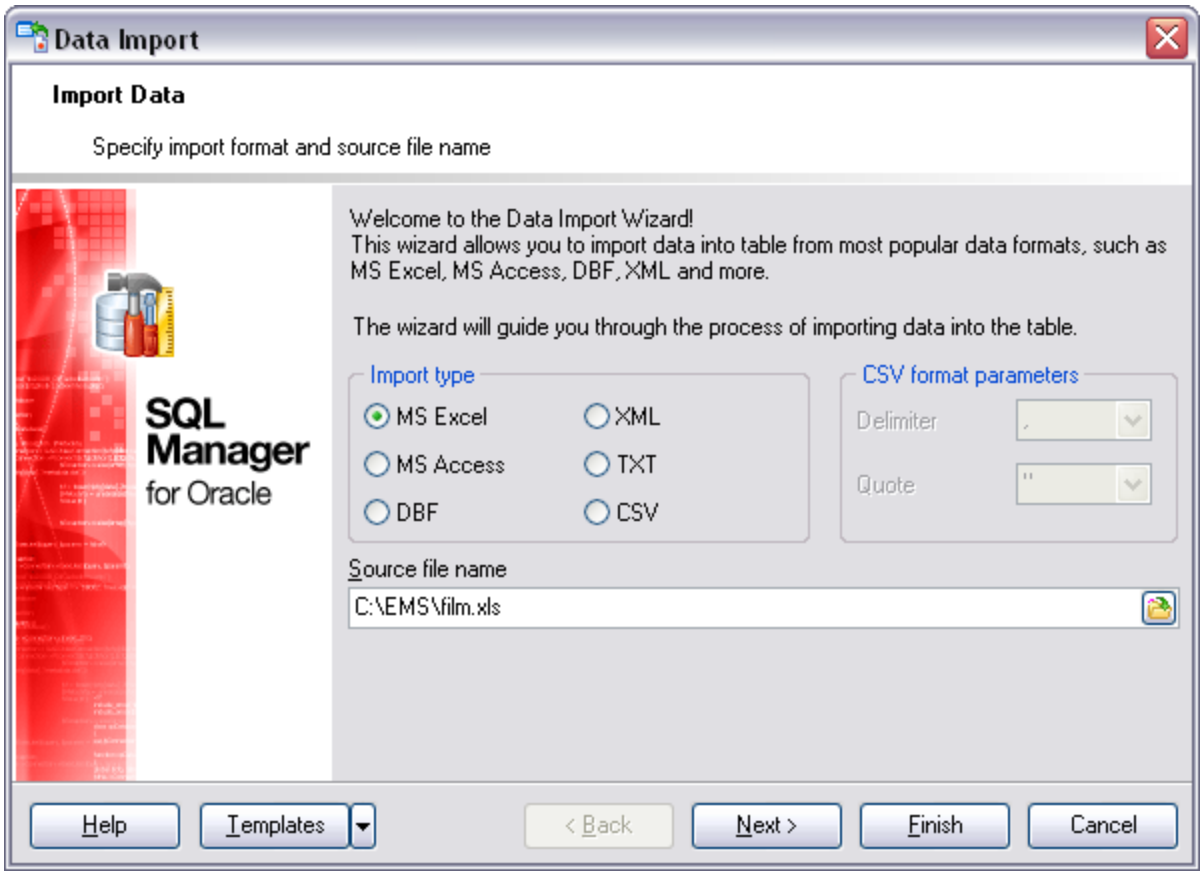
for CSV files.



MS Excel - the most popular e-table format - Microsoft Excel. Files created with the versions 95, 97, 2000 and XP are fully supported.

MS Access - import from Microsoft Access format trough an ADO connection.

DBF - the data will be imported from the DBF format.

XML - the XML format. XML is a markup language for documents containing structured information.

TXT - the plain text format.

CSV - Comma Separated Value format.

Note: the text formats including Text file and CSV are usually used as working or interchange formats.

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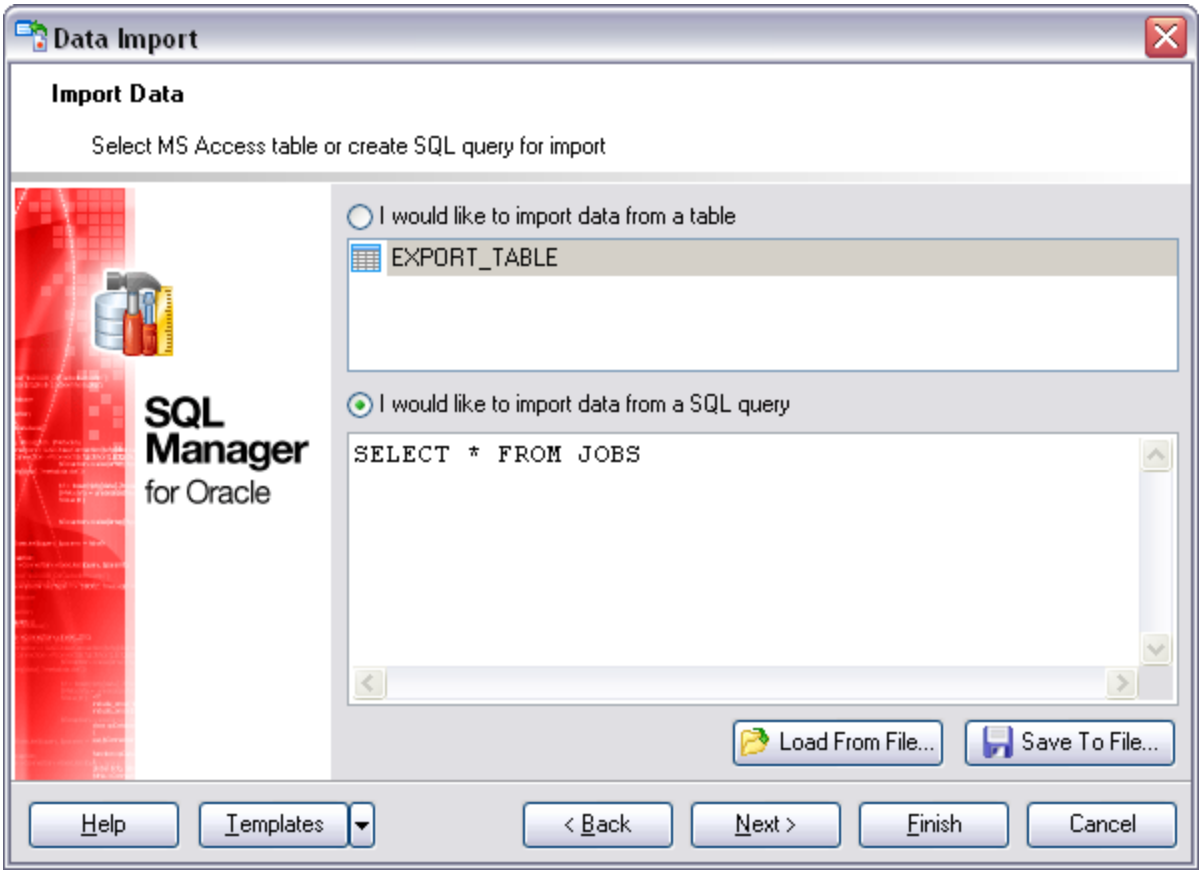
8.2.2 Selecting data source

Note: this step is available only if you import data from an Access database.

Select a table from table list or type a query in the corresponding text box to specify data source. If you choose a query as data source, you also can load an SQL query from a file or save the current one to a file using the corresponding buttons.



8.2.3 Setting fields correspondence

The correspondence between import fields is defined at the corresponding step of the Import Data Wizard.

- MS Excel
- MS Access
- DBF
- XML
- TXT
- CSV

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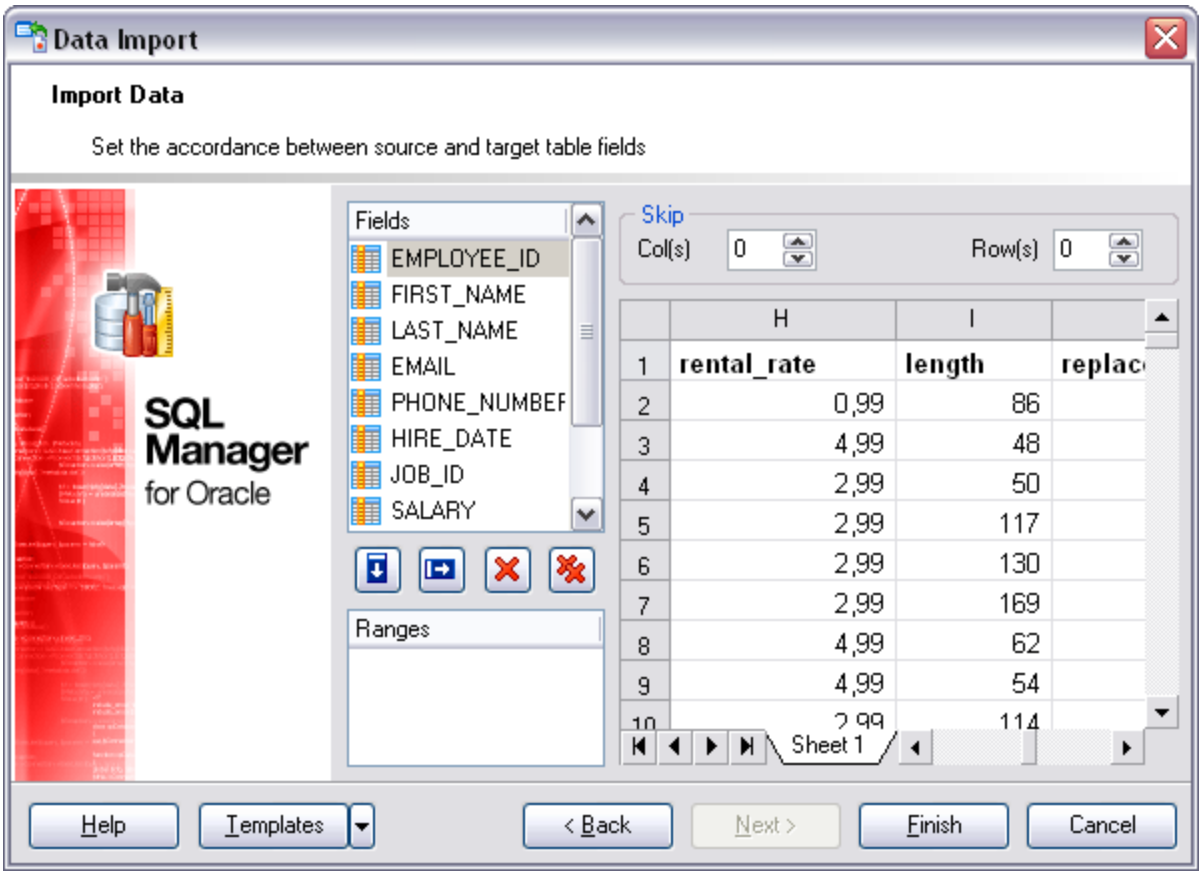

8.2.3.1 Excel

Select ranges in the grid for the target field, selected in the **Fields** list. Click column or caption to select a whole column or row respectively. Using the popup menu of the **Ranges** list you can add or edit ranges manually, as well as remove them or change their order. After you define a range for the selected field, proceed to the next one. If source file and destination table have the same order of columns or rows, you can use **Auto Fill Cols** or **Auto Fill Rows** buttons to set the correspondence between them automatically.

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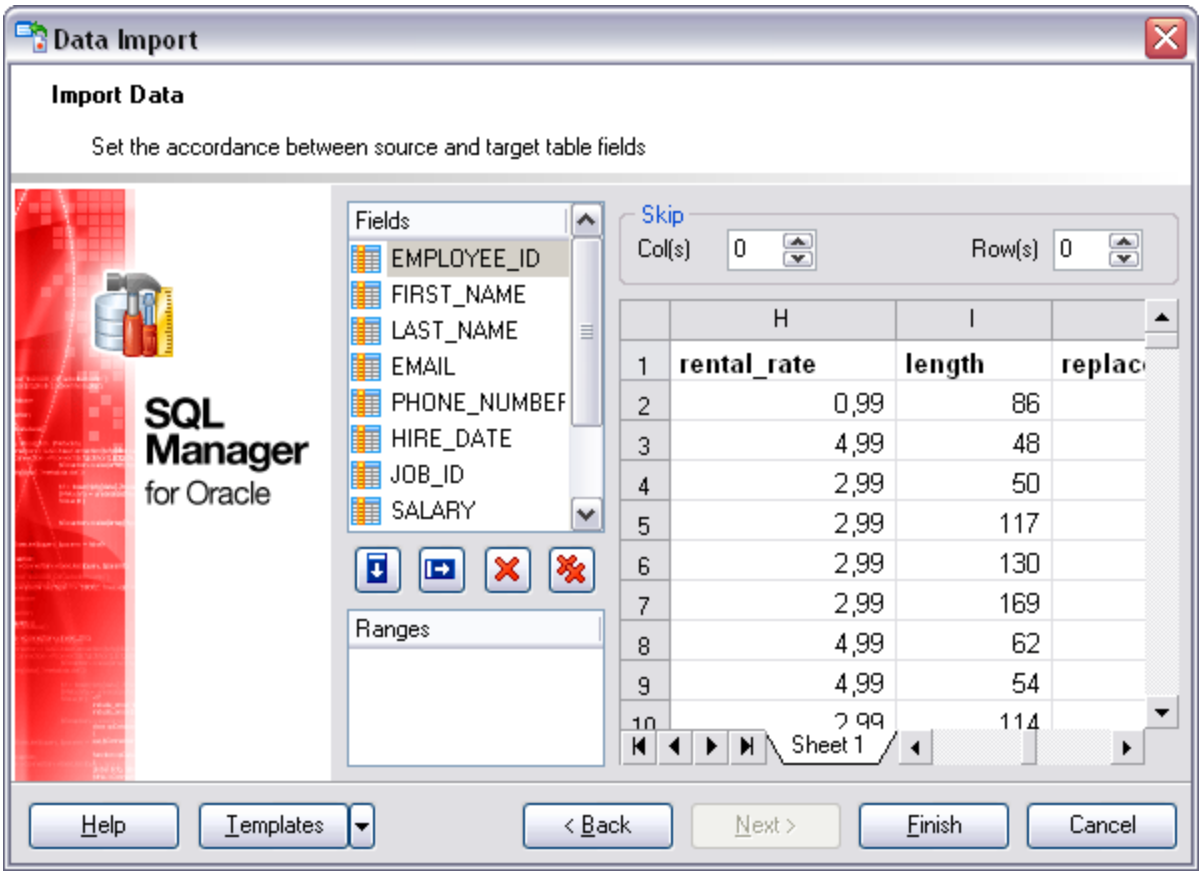

8.2.3.2 Access

Select a target field from the left list and select a source Access field from the right list, then click **Add** button. This adds a link for these fields to the lower list. Click **Remove** or **Clear** button to remove the selected or all items from the lower list.

Use **Auto Fill** button to set the correspondence between the source and target fields according to the way they are ordered.

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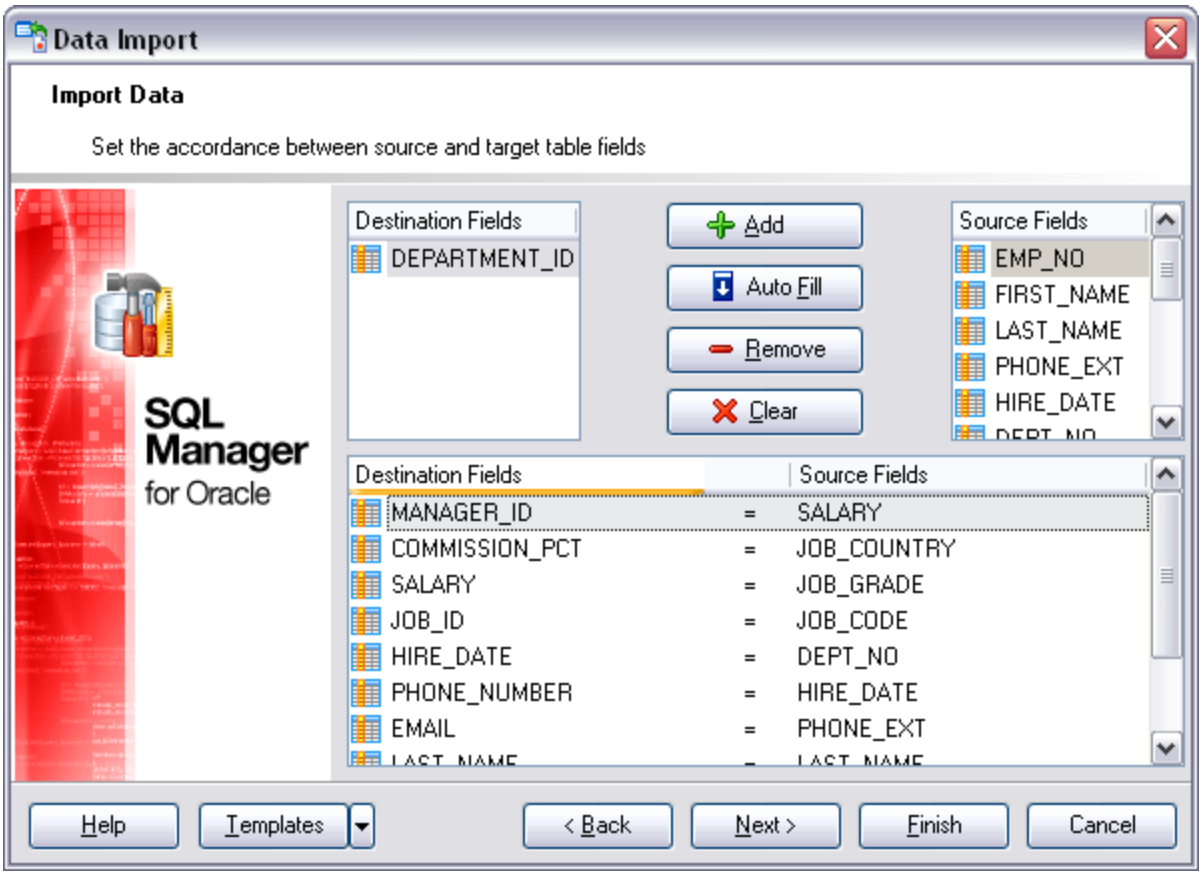

8.2.3.3 DBF

Select a target field from the left list and select a source DBF field from the right list, then click **Add** button. This adds a link for these fields to the lower list. Click **Remove** or **Clear** buttons to remove the selected or all items from the lower list.

Use **Auto Fill** button to set the correspondence between the source and target fields according to the way they are ordered.
Use **Skip deleted records** option to chose skipping records marked as deleted.

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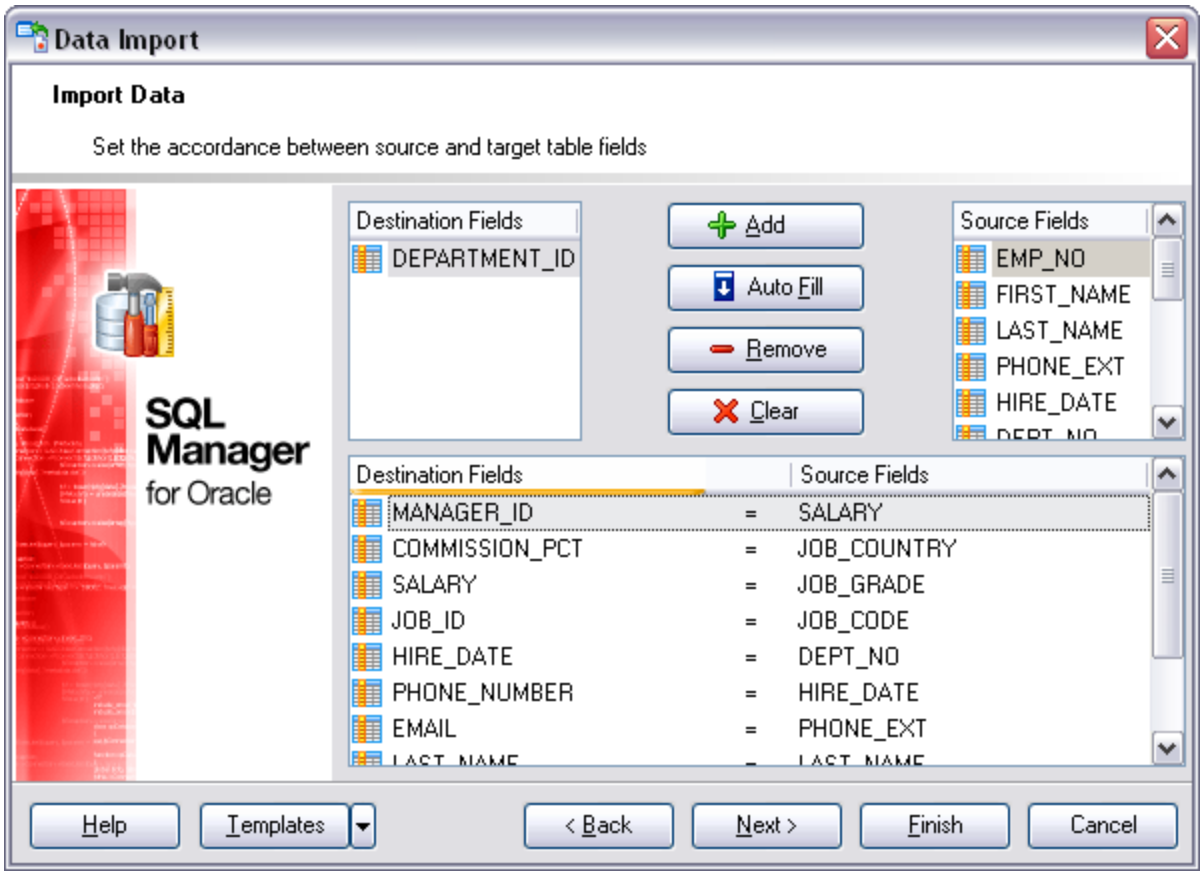

8.2.3.4 XML

Select a target field from the left list and select a source XML field from the right list, then click **Add** button. This adds a link for these fields to the lower list. Click **Remove** or **Clear** button to remove the selected or all items from the lower list.

Note that import is only possible from XML-Datapacket (CDS) format. Conversion between generic XML documents and the data packets that are used by SQL Manager 2007 for Oracle can be performed with the help of XML Mapper by Borland (R).

Use **Auto Fill** button to set the correspondence between the source and target fields according to the way they are ordered.

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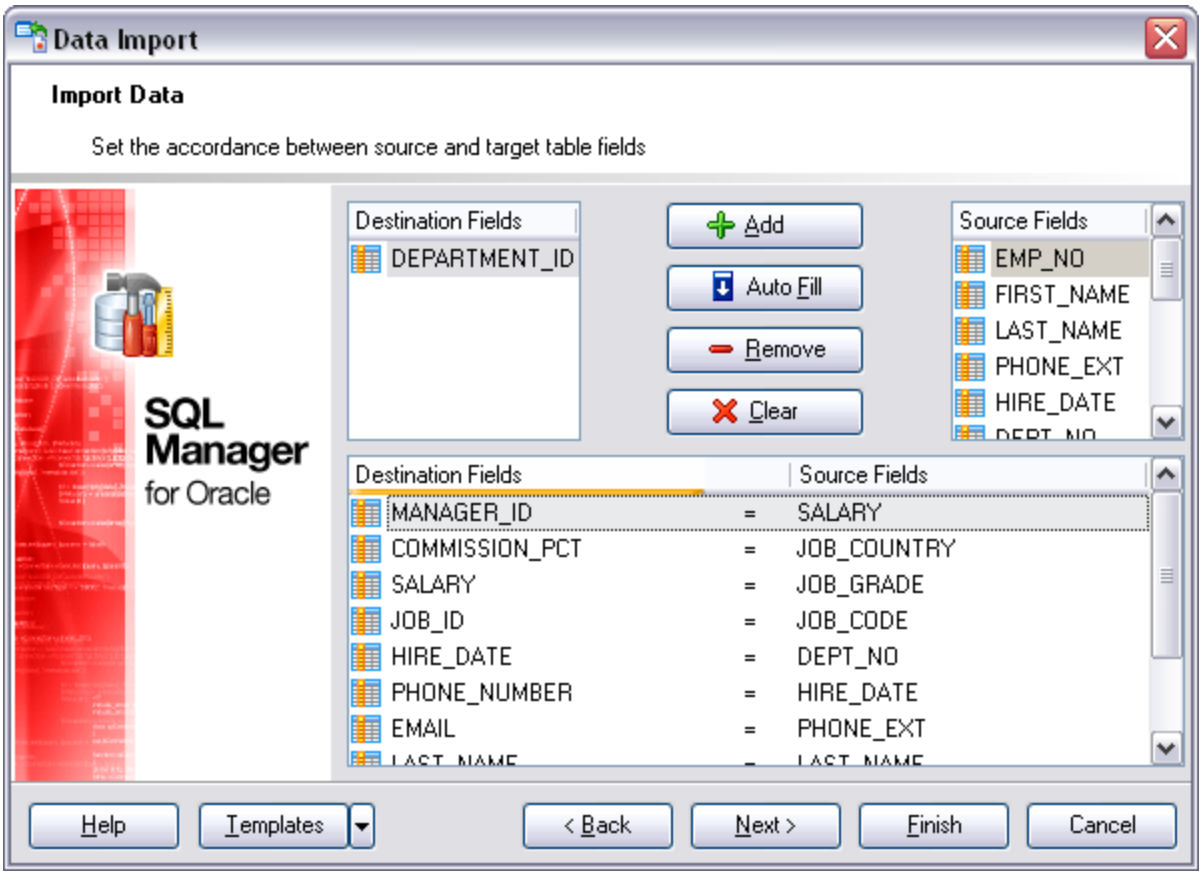

8.2.3.5 TXT

Select the target field in the list, and then double-click in the text viewer area to add separators, delimiting the source column bounds. Click between the separators to assign the correspondence. Proceed to the next field when done.

The **Skip Lines** option allows you to point out a number of the unrequired lines to skip.

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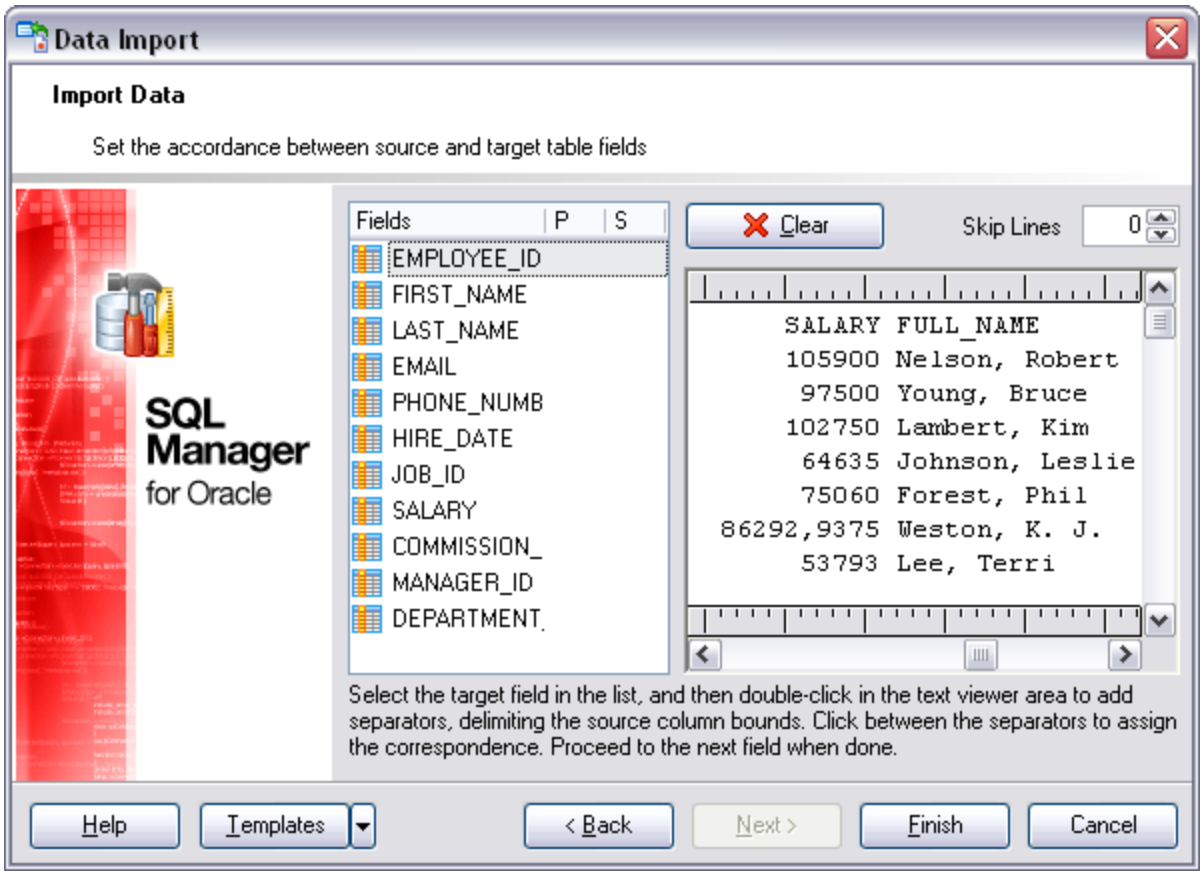

8.2.3.6 CSV

Select the target field in the list, and then click at the source column in the viewer area to set the correspondence. Repeat this operation for each field.

Use **Auto Fill** button to set the correspondence between the CSV columns and target fields according to the way they are ordered.
The **Skip Lines** option allows you to point out a number of the unrequired lines to skip.

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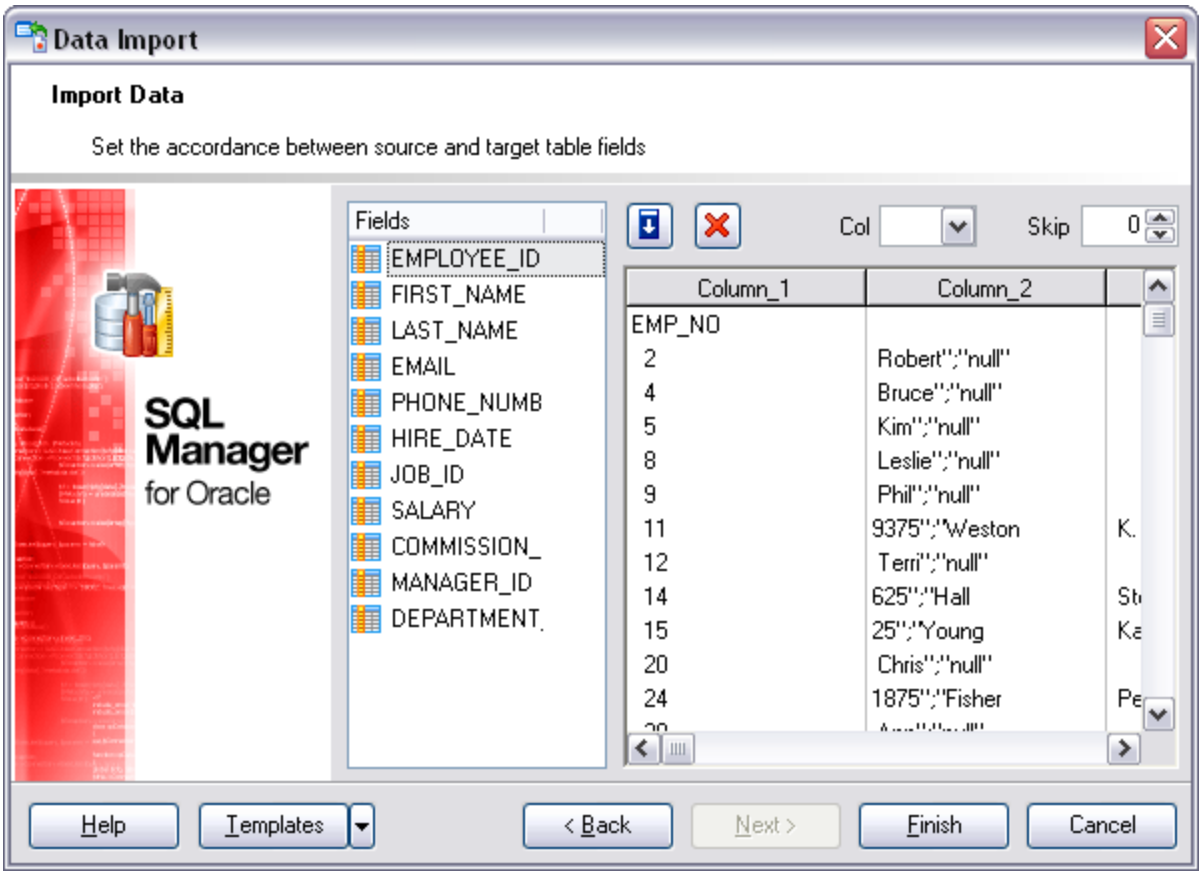

8.2.4 Adjusting data formats

SQL Manager 2007 for Oracle provides a number of options for setting common formats for all imported data.

For more details see Format specifiers.

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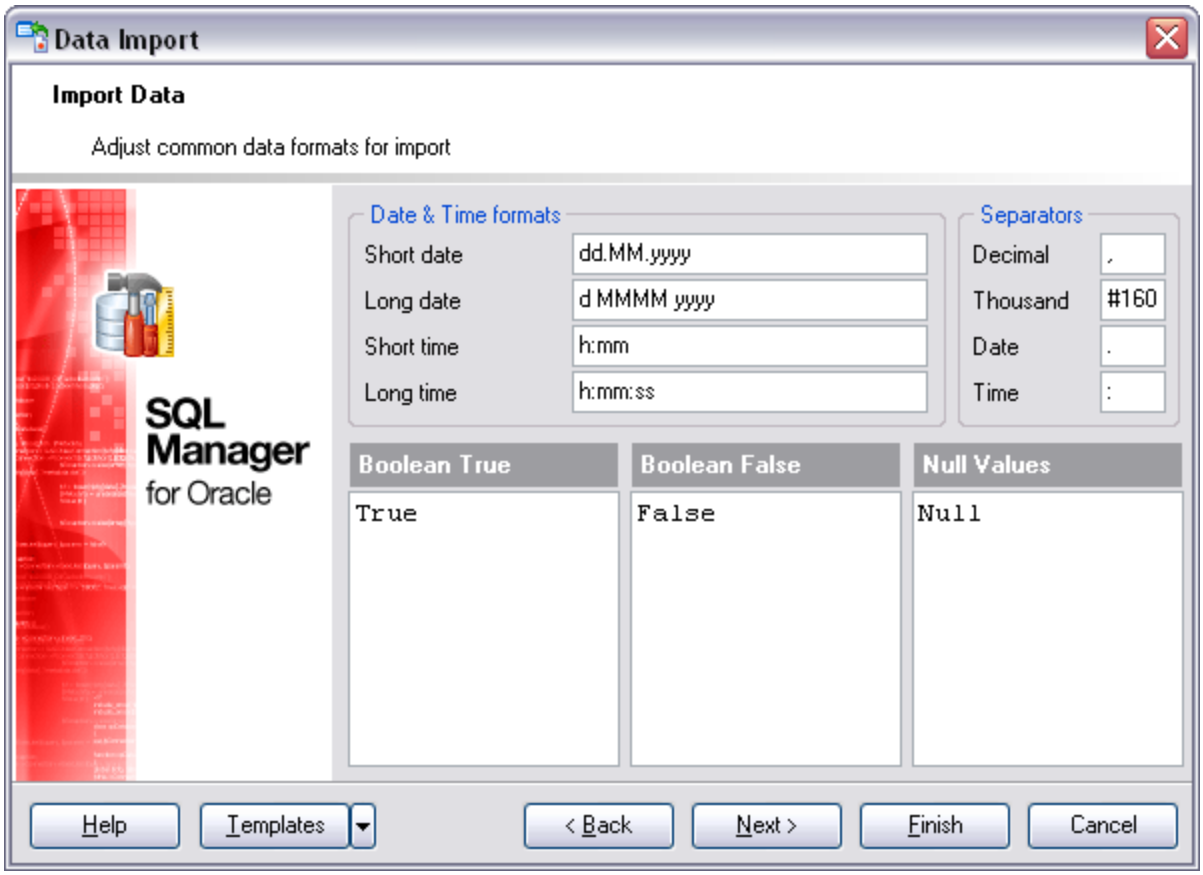

8.2.5 Setting advanced field formats

Select a field in the list and adjust format options that will be applied to this field only.

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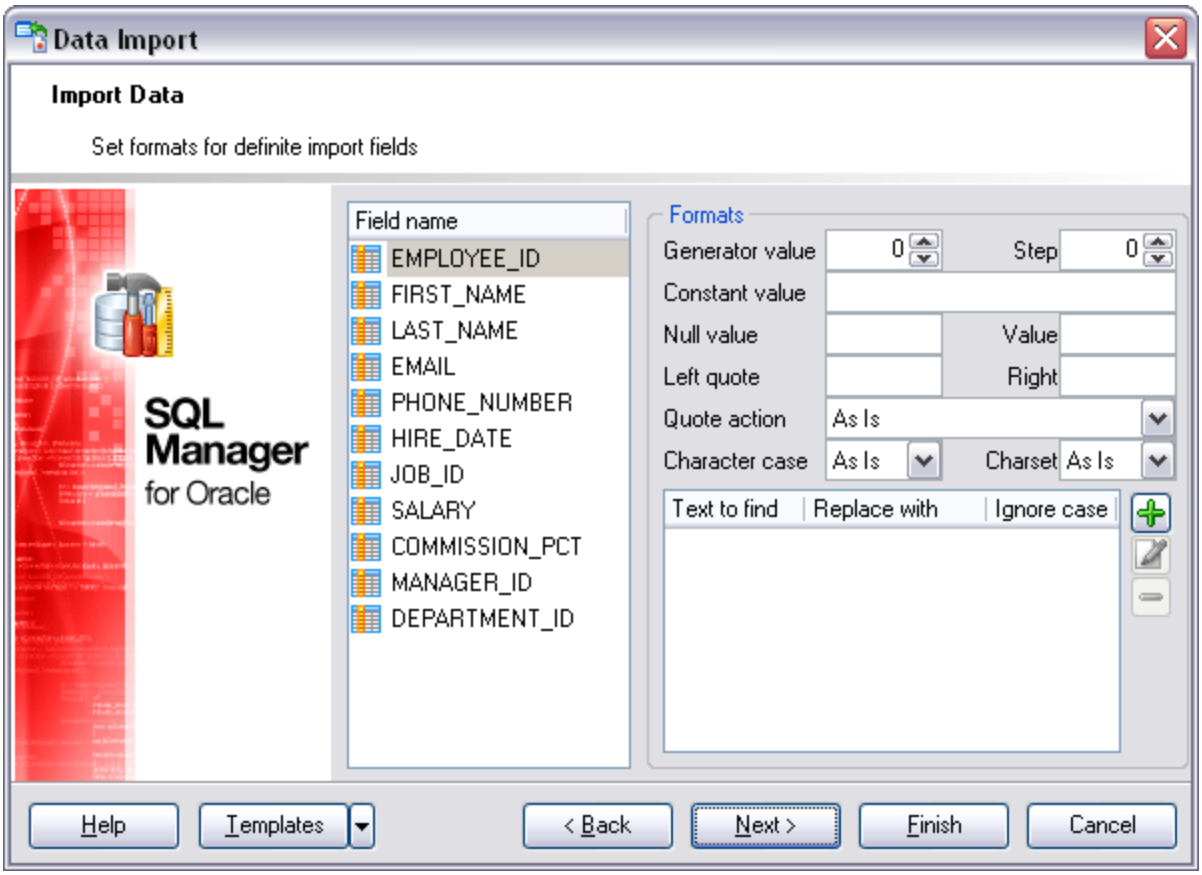

8.2.6 Setting import mode

Use **Import mode** to select whether to insert all records, or to update/delete existing ones. Note that for updating/deleting existing records in the target table you should move its key columns from the **Available columns** list to the **Selected columns** list.

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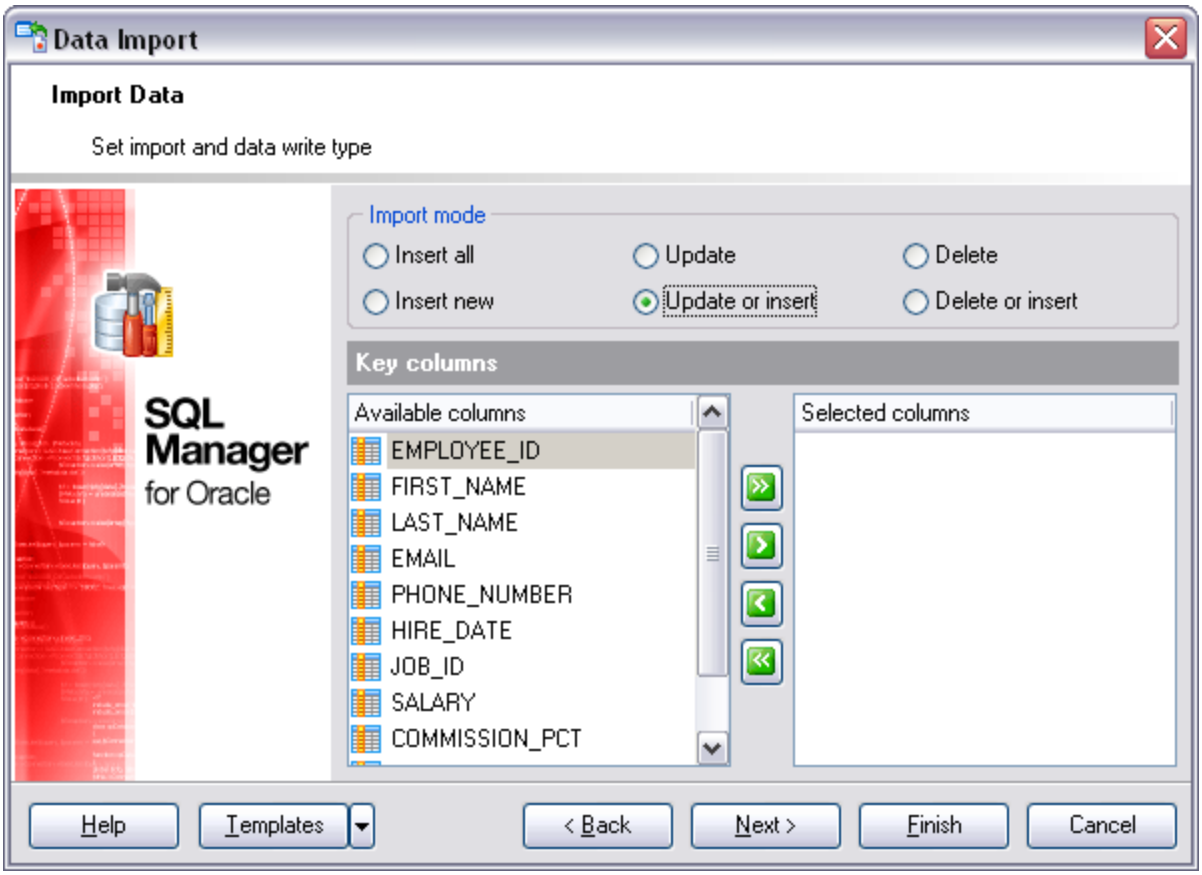

8.2.7 Customizing common options

Set the common options and click **Finish** button to start import.

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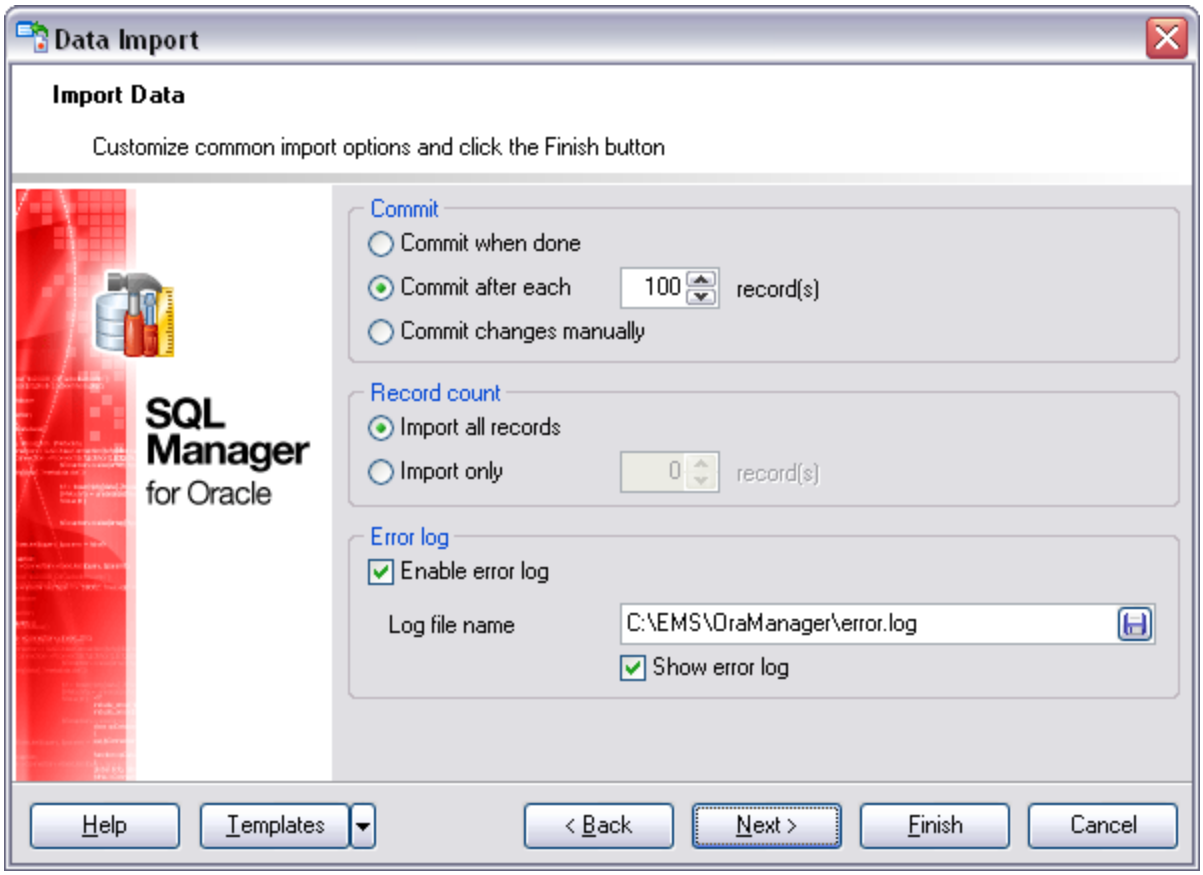

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8.3 Export as SQL Script

Export as SQL Script Wizard allows you to export data from a table or a query result to SQL script as a number of INSERT statements.

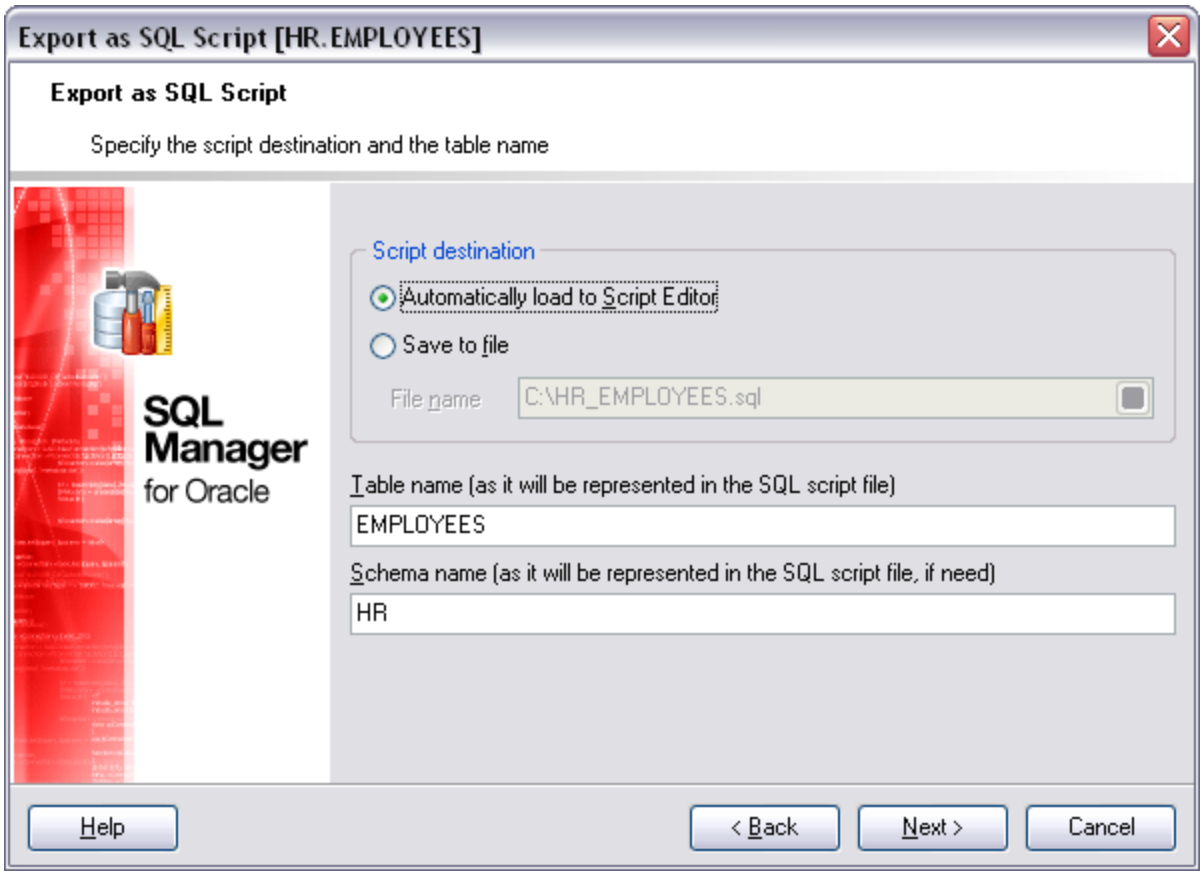
To export data as INSERT from a table or a query:

- open the table in Table Editor or open and execute query in SQL Editor or Query Builder;
- open **Data** or **Result** tab respectively;
- click **Export as SQL Script** item on the navigation bar.

- Setting destination file name for the script
- Selecting field to export
- Editing result create statement
- Specifying export options
- Using templates

See also:

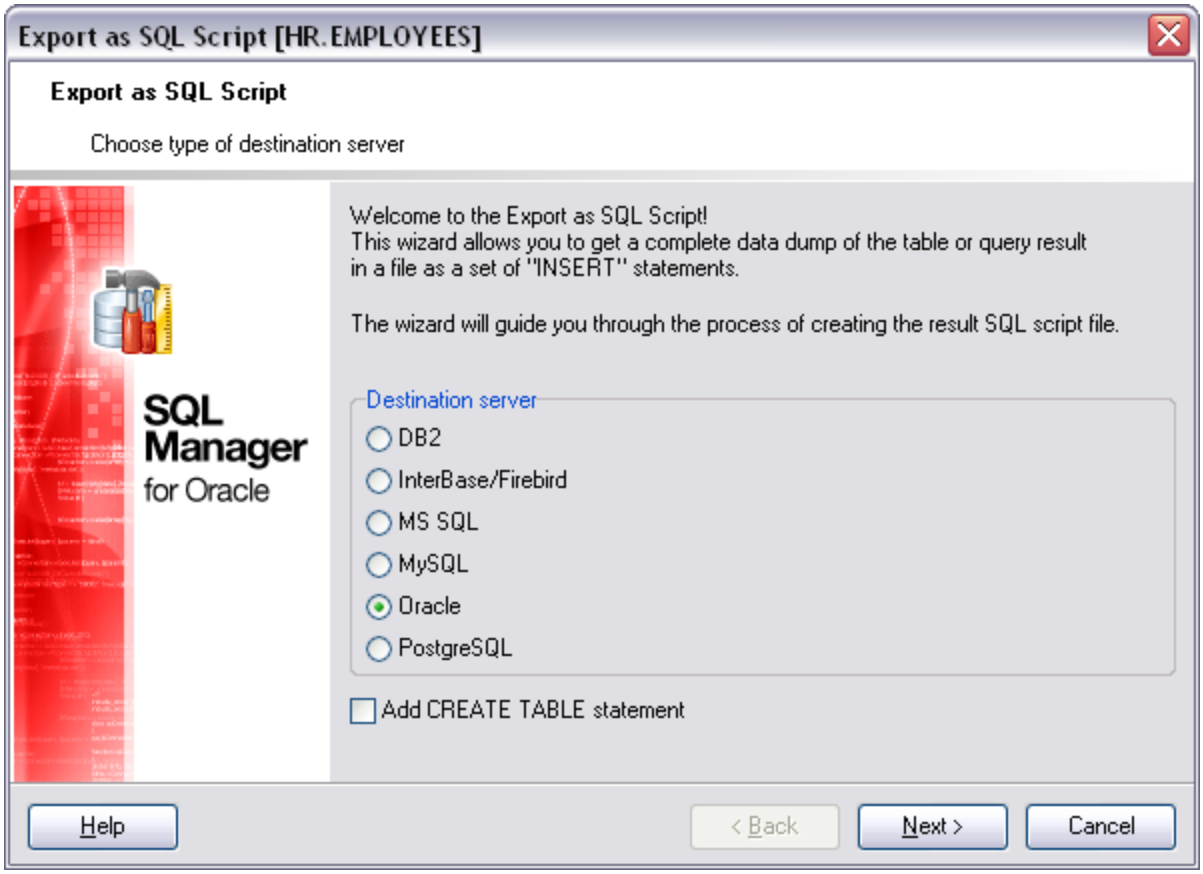
Export Data Wizard
SQL Script Editor
Extract Metadata


Export as SQL Script [HR.EMPLOYEES]
Export as SQL Script
Specify the script destination and the table name
SQL Manager for Oracle
Script destination
Automatically load to Script Editor
Save to file
File name
C:\HR_EMPLOYEES.sql
Table name (as it will be represented in the SQL script file)
EMPLOYEES
Schema name (as it will be represented in the SQL script file, if need)
HR
Help
< Back
Next >
Cancel

© 2007 EMS Database Management Solutions

8.3.1 Specifying destination server

On this step you are to select destination server. Result script will be generated in compliance with the specifications of the target server.


Export as SQL Script [HR.EMPLOYEES]
Export as SQL Script
Choose type of destination server
SQL Manager for Oracle
Welcome to the Export as SQL Script!
This wizard allows you to get a complete data dump of the table or query result in a file as a set of "INSERT" statements.
The wizard will guide you through the process of creating the result SQL script file.
Destination server
DB2
InterBase/Firebird
MS SQL
MySQL
Oracle
PostgreSQL
Add CREATE TABLE statement
Help
< Back
Next >
Cancel

8.3.2 Setting destination file name

Set the file name for the result script and set the table name to include in the result SQL script.

Note that you can save the script to file. Select the appropriate item and set target file name.

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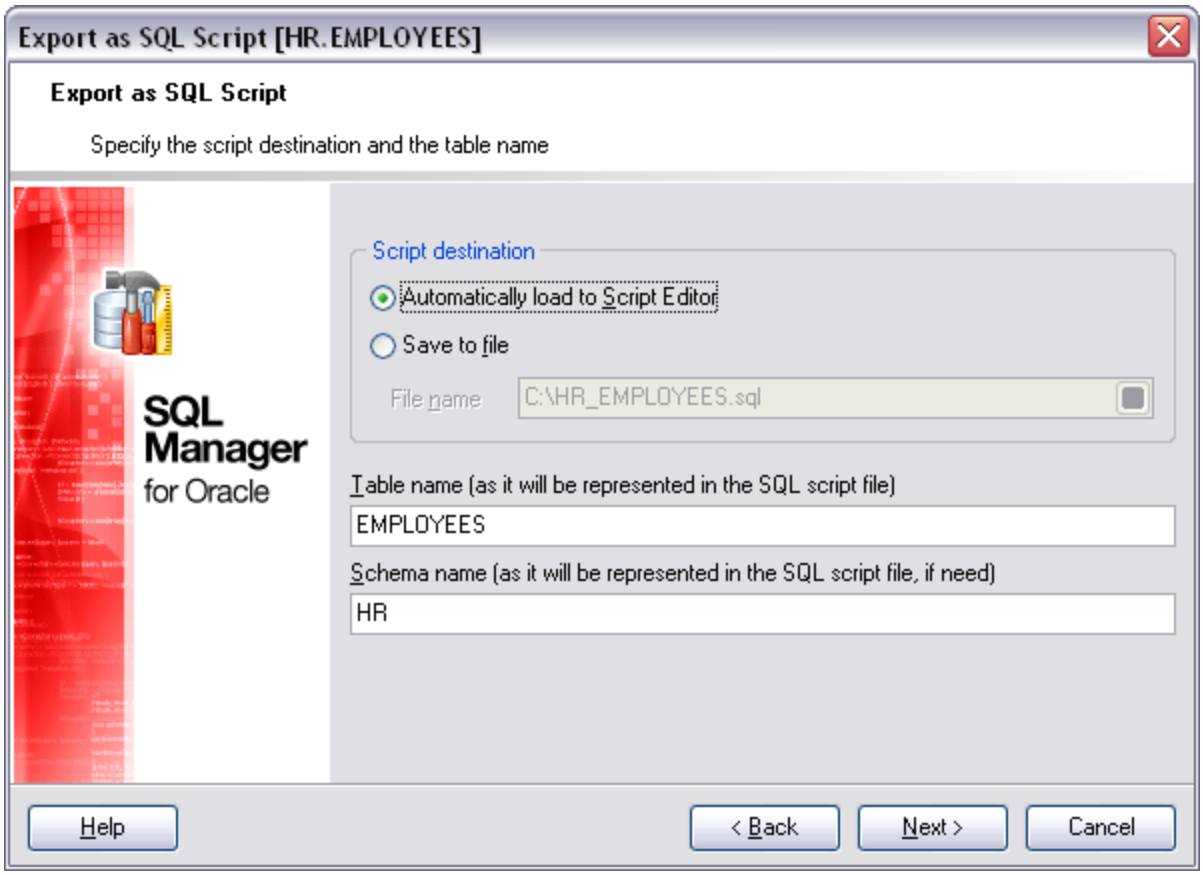
Export as SQL Script [HR.EMPLOYEES]
Export as SQL Script
Specify the script destination and the table name
SQL Manager for Oracle
Script destination
Automatically load to Script Editor
Save to file
File name
C:\HR_EMPLOYEES.sql
Table name (as it will be represented in the SQL script file)
EMPLOYEES
Schema name (as it will be represented in the SQL script file, if need)
HR
Help
< Back
Next >
Cancel

8.3.3 Setting BLOB options

Set the desirable extract options for BLOBs. Select whether the BLOBs should be extracted as strings or to a file. In that case please specify destination file name and location. You may use optional file compression as well.

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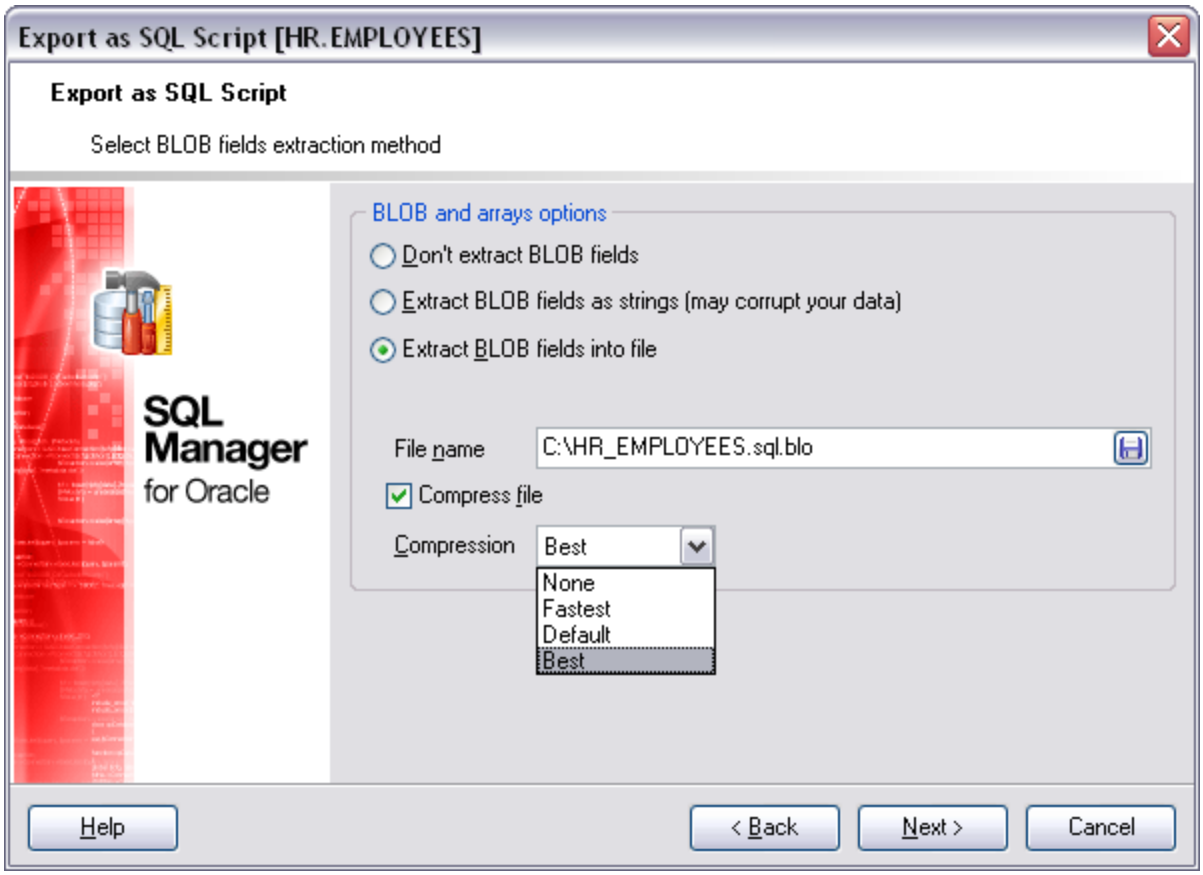

8.3.4 Selecting fields to export

Select fields to include in the result SQL script. All the table fields are included in the **Selected fields** list by default. If you do not want some fields to be exported, move them back to the **Available fields** list.

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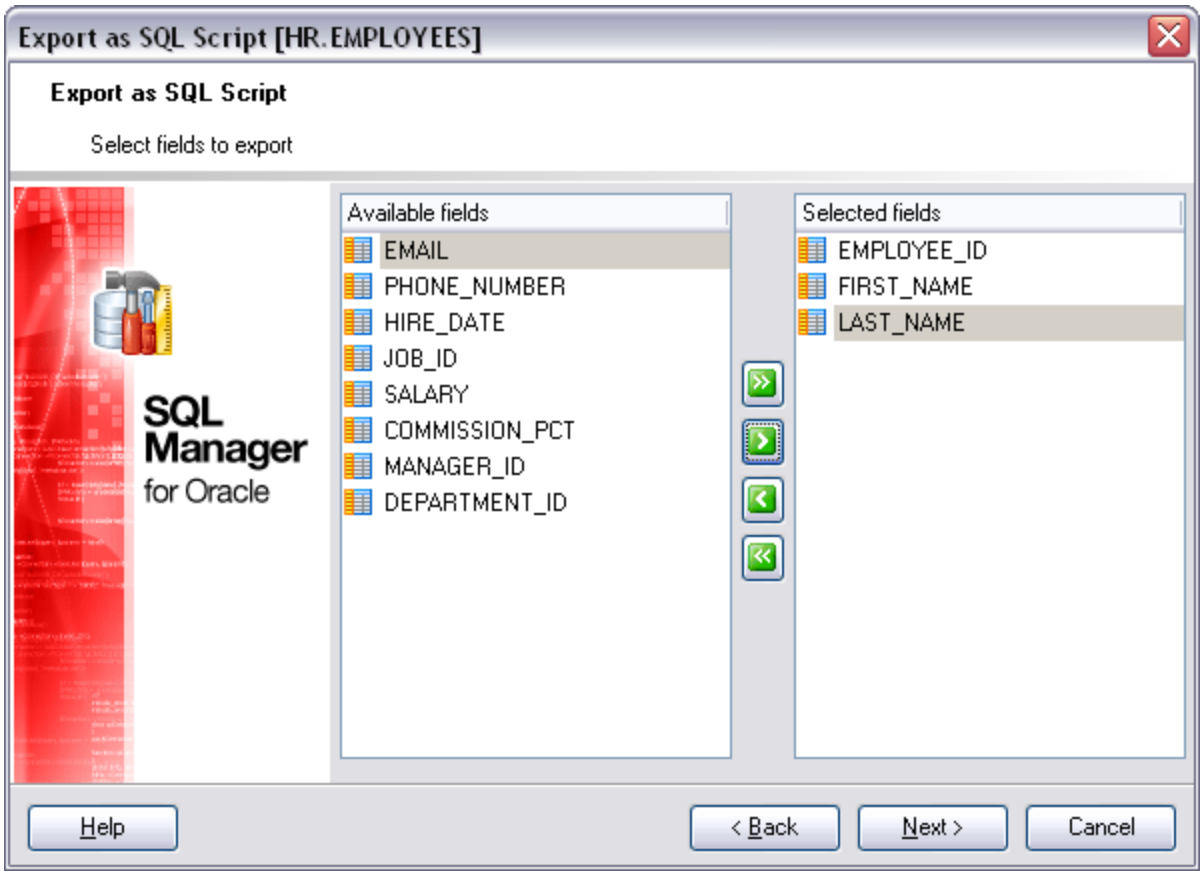

8.3.5 Editing result SQL script

This step is available only if **Add CREATE TABLE statement** option was checked on the **Setting destination file name** step of the Wizard. It allows you to edit the SQL script for creating table.

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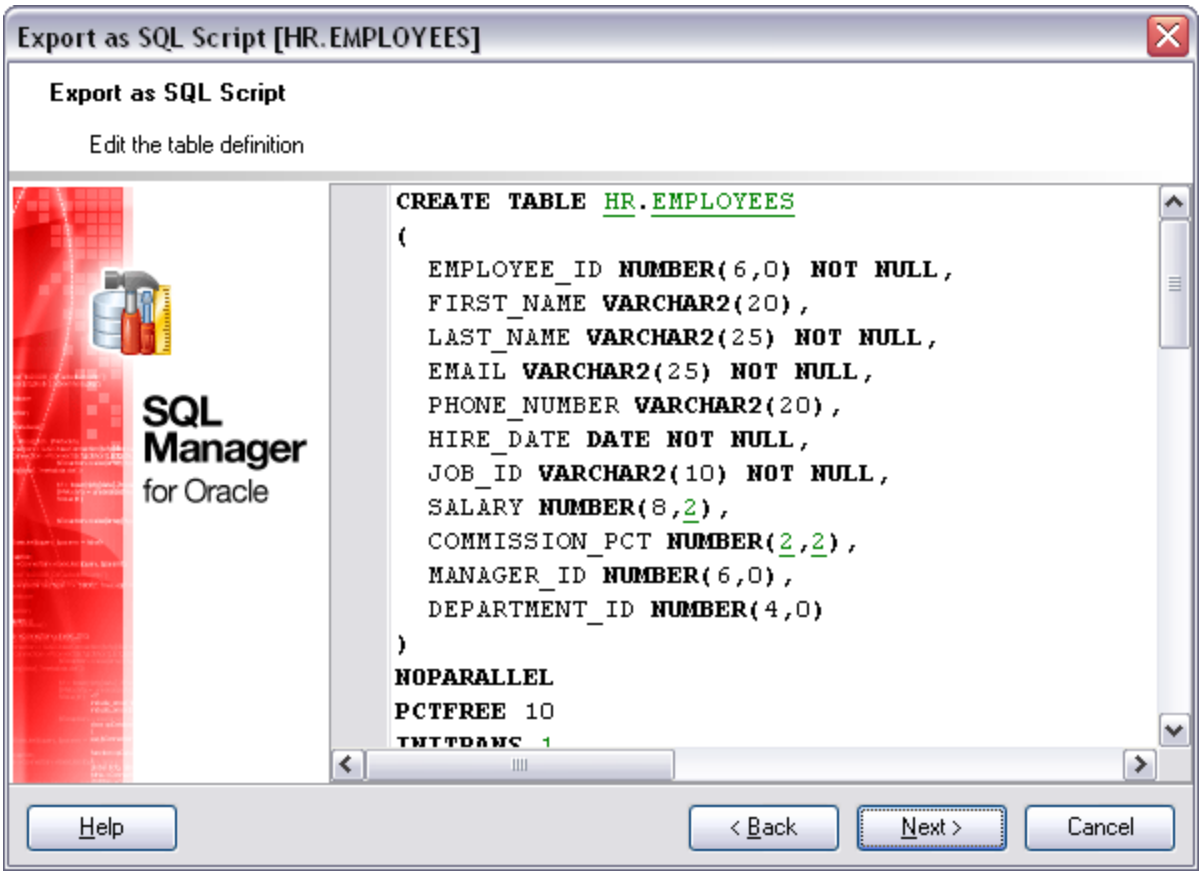

8.3.6 Setting export options

Specify export options according to your needs. Check **Load generated script into Script Editor** option to load the result to SQL Script Editor after executing. Choose if the block of records should be commited and define the size of the block. Click **Finish** button to start the process.

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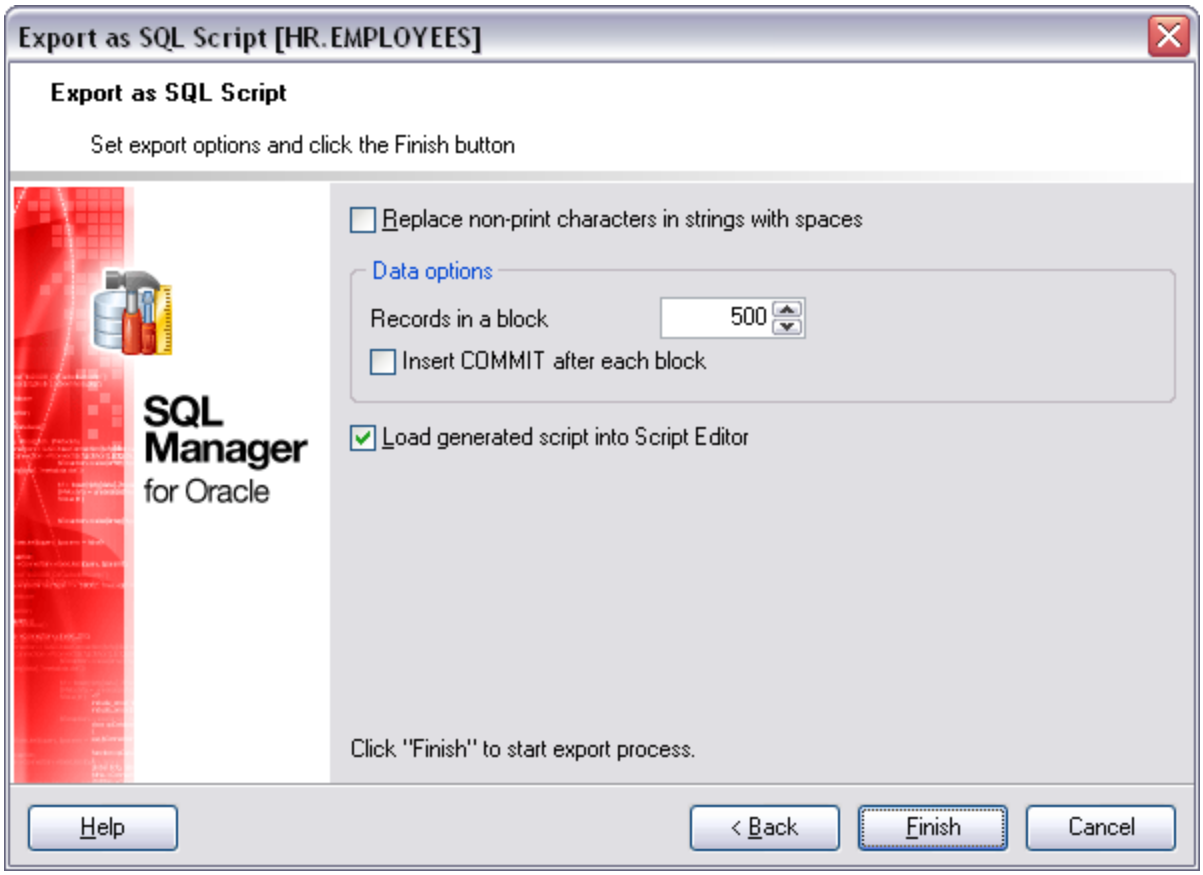

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Part

9 Database Tools

SQL Manager 2007 for Oracle provides a number of powerful tools for working with the databases.

The following tools are available:

Dependency Tree
Allows you to view all the object dependencies in a one diagram.

Visual Database Designer
Allows you to lay out your database schema visually.

SQL Monitor
Displays all the SQL statements executed while working in SQL Manager 2007 for Oracle.

SQL Script Editor
Executes SQL scripts to the database.

Extract Database Wizard
Extracts the table metadata to the SQL script, which can be later executed on another machine to reserve the database structure.

Print Metadata
Creates powerful metadata reports in the WYSIWYG mode, ready for printing.

HTML Report
Creates powerful metadata reports in the HTML format.

Report Designer
Allows you to build and print database reports

Using templates

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9.1 Dependency Tree

The **Dependency Tree** tool allows you to view all the object dependencies in a one diagram. To call the **Dependency Tree** window select the **Tools | Dependency Tree** menu item.

To view dependencies of the object, click the **Select object** button on the toolbar. Then select the object from the dialog window. The dependency tree will appear in the main area of the window.

The root object is marked out with blue frame. The objects which the root object depends from are situated at the left of the tree. The objects which depends from the root object are situated at the right of the tree.

You can switch between the objects by selecting them from the diagram. The selected object will become the root object.

To show/hide subobjects click the **Show Subobjects / Hide Subobjects** button on the toolbar.

There is history of selected root objects available. You can move back and forward through this history using arrow buttons on the toolbar.

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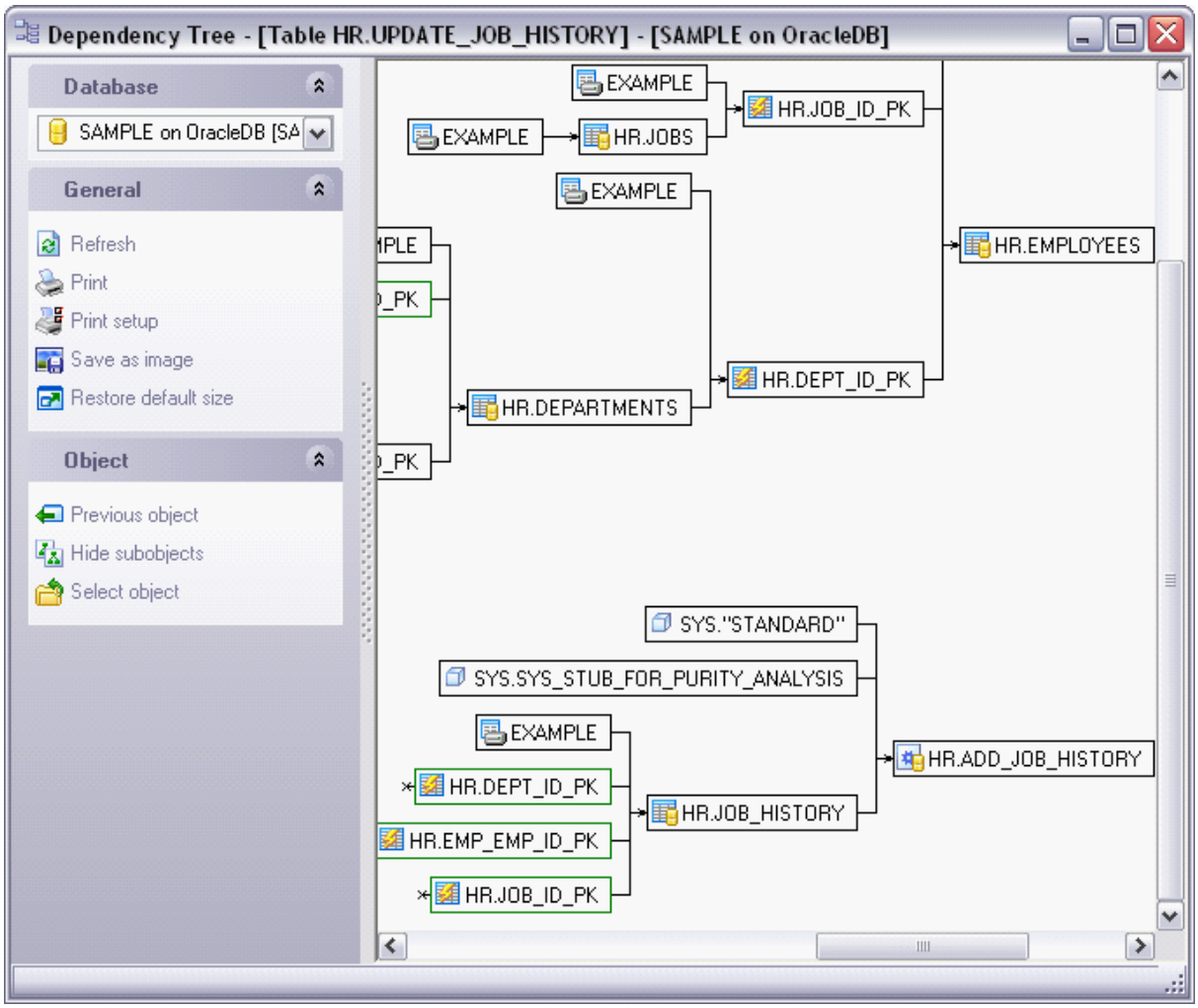

Availability:

Windows Full	Yes
Windows Lite	No

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9.2 Visual Database Designer

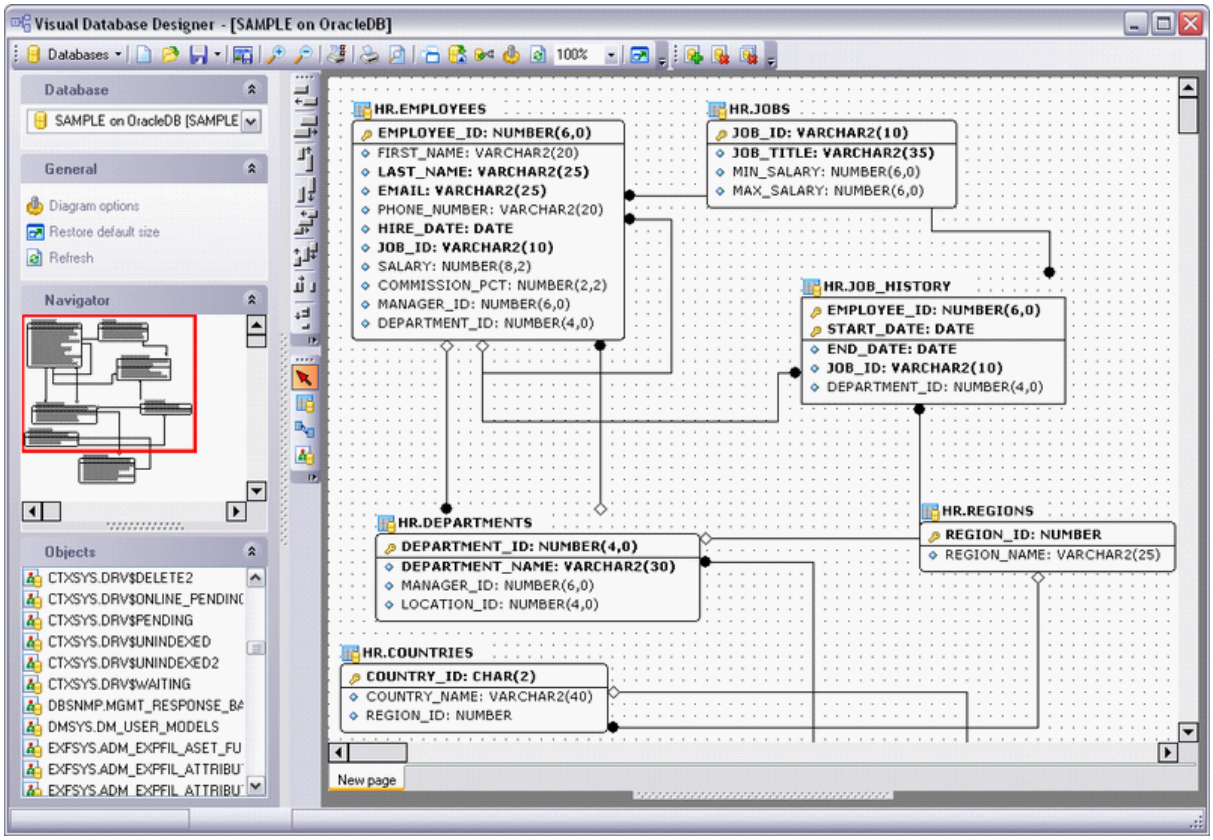
Visual Database Designer is provided for designing your database visually. It allows you to create, edit and drop tables and table fields, set links between tables, and so on.

To open the designer, select the **Tools | Visual Database Designer** main menu item.

- Using navigation bar
- Navigating on diagram
- Adding objects to diagram
- Removing objects from diagram
- New object creation
- Creating relationships
- Working with multiple pages
- Reverse engineering
- Printing diagram
- Saving/Loading diagram
- Setting diagram options

See also:

Visual Query Builder



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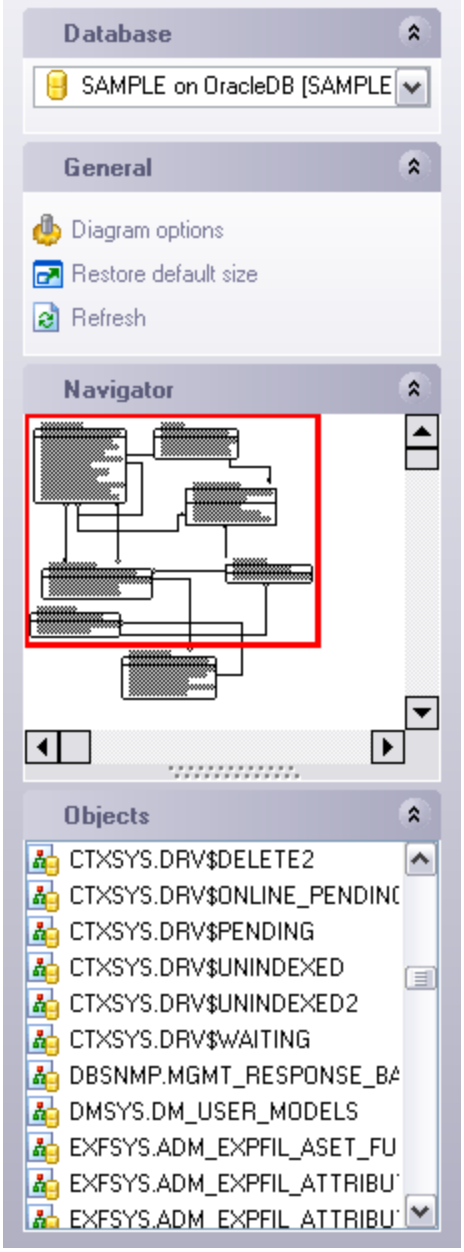
9.2.1 Using navigation bar

The **navigation bar** at the left allows you to:

- Select the database to design.
- Setting diagram options.
- Bring the window to its default size.
- Navigate with the diagram.
- View the list of objects that can be added to the diagram.



9.2.2 Navigating on diagram

To navigate on the large diagram use the **Navigator** tool on the **navigation bar** at the left. It allows you to see the whole diagram in a reduced size and even to move the

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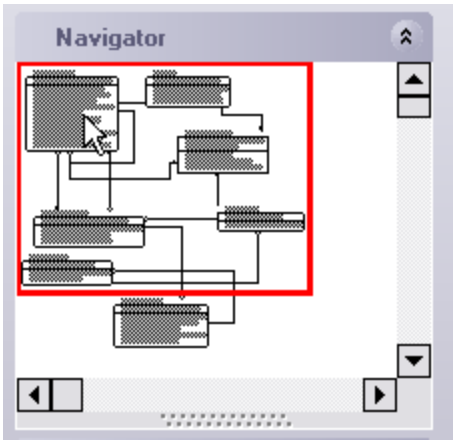
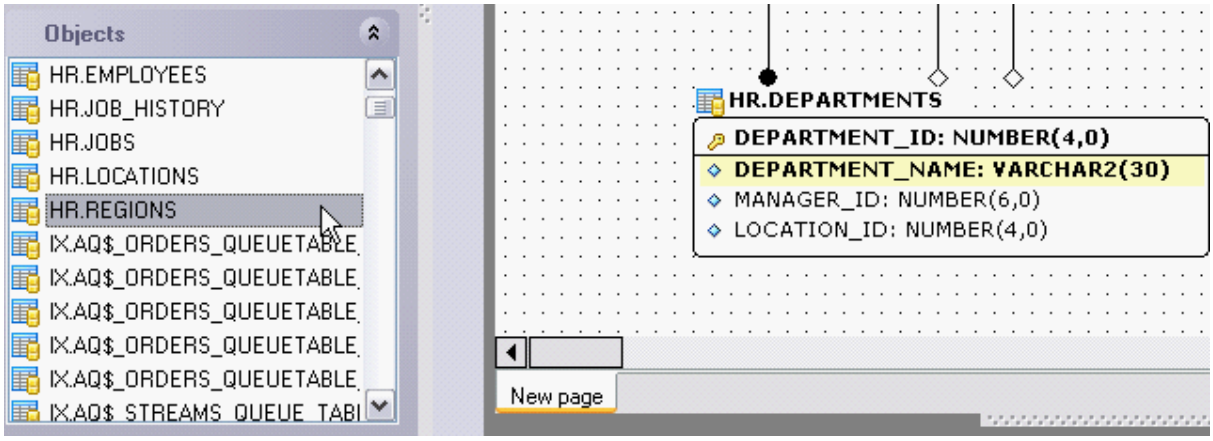
objects in the diagram. The area currently visible at the main diagram area is outlined in red color.



9.2.3 Adding objects to diagram

To add an object to the diagram, drag it from the **Objects** group on the **navigation bar** into the desired place on the diagram or simply double-click on this object.



9.2.4 Removing objects from diagram

To remove an object(s) from the diagram, select them, right-click on its title and choose **Hide Selected Object(s)** menu item or simply press the **Del** key.

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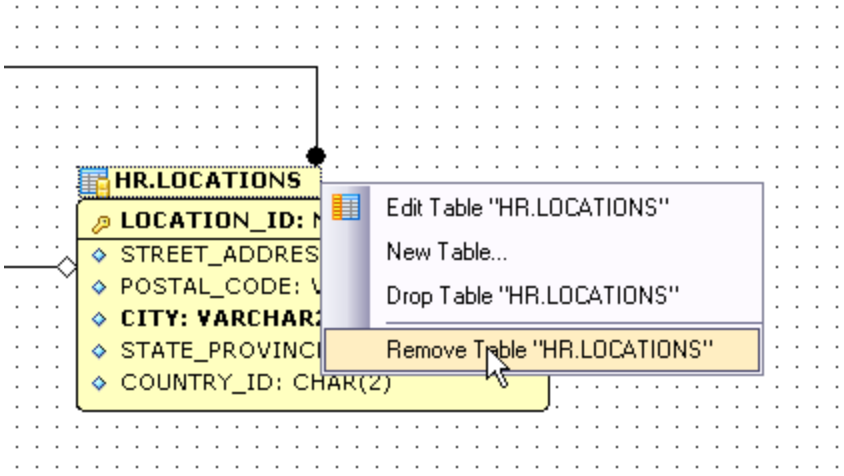
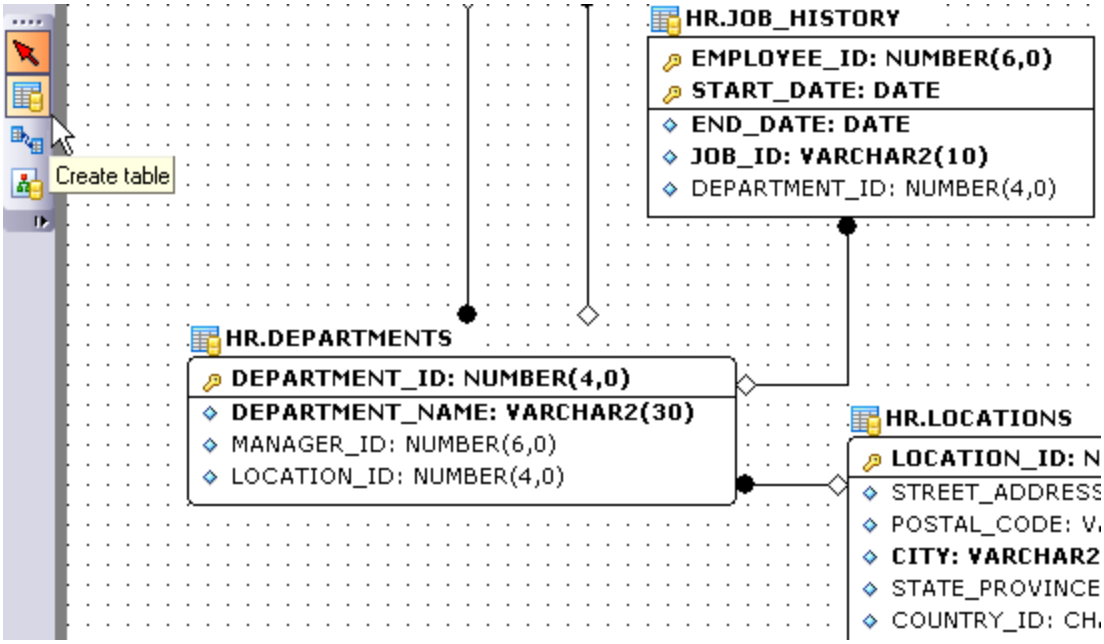


9.2.5 New objects creation

To create a new table using Visual Database Designer:

- Press **Create table** button on the toolbar;
- Click at the desired point on the diagram to place the new table to;
- Create new table with the New Table dialog.



9.2.6 Creating relationships

To create a new relationship (which is the foreign key in terms of database):

- Press **Create relation** button on the toolbar;
- Click on the table where referential constraint should be created;
- Click on the referred table;
- Create new foreign key with the New Foreign Key dialog.

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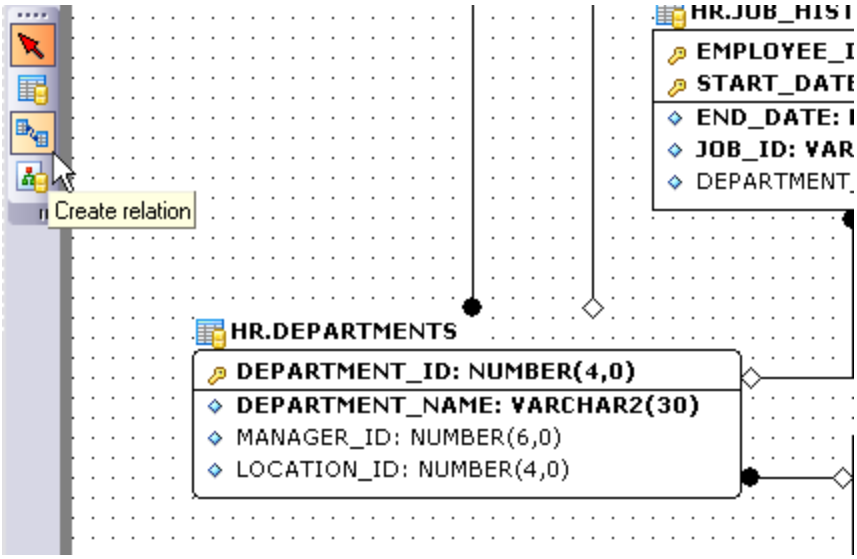
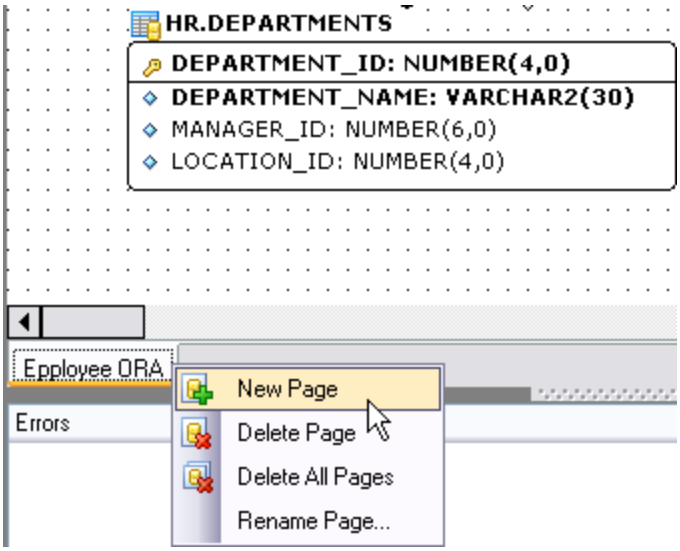


9.2.7 Working with multiple pages

You can create several pages in one diagram to separate certain subject areas from the database for better viewing and understanding.

To manage diagram pages, right-click on the tabs under the diagram area and select the appropriate menu item for adding, deleting or renaming pages.



9.2.8 Reverse engineering

The **reverse engineering** process builds relationship diagram basing on the current database's structure. The objects are arranged automatically within the diagram. To start the reverse engineering process press the appropriate button on the toolbar.

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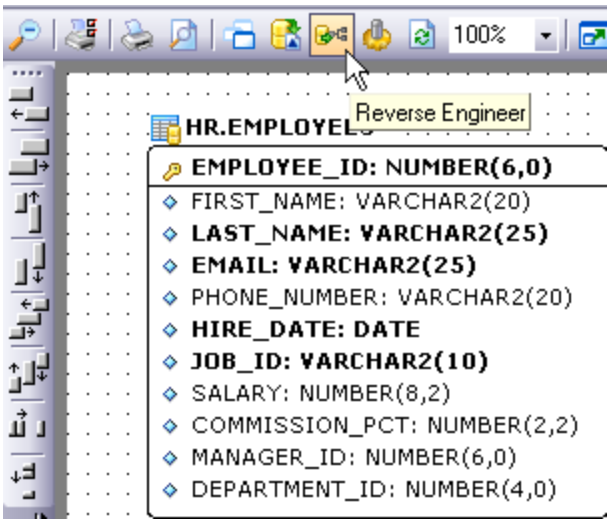

9.2.9 Printing diagram

Visual Database Designer allows you to print and preview the diagram.

To preview the diagram:

- Press **Print Preview** button on the toolbar.
- Preview the diagram in the Print Preview Dialog.

To setup print options:

- Press **Print Options** button on the toolbar.
- Set printing options in the Print Setup Dialog and press **OK** button.

To print the diagram:

- Press **Print** button on the toolbar.
- Set printing options in the Print Setup Dialog and press **Print** button.

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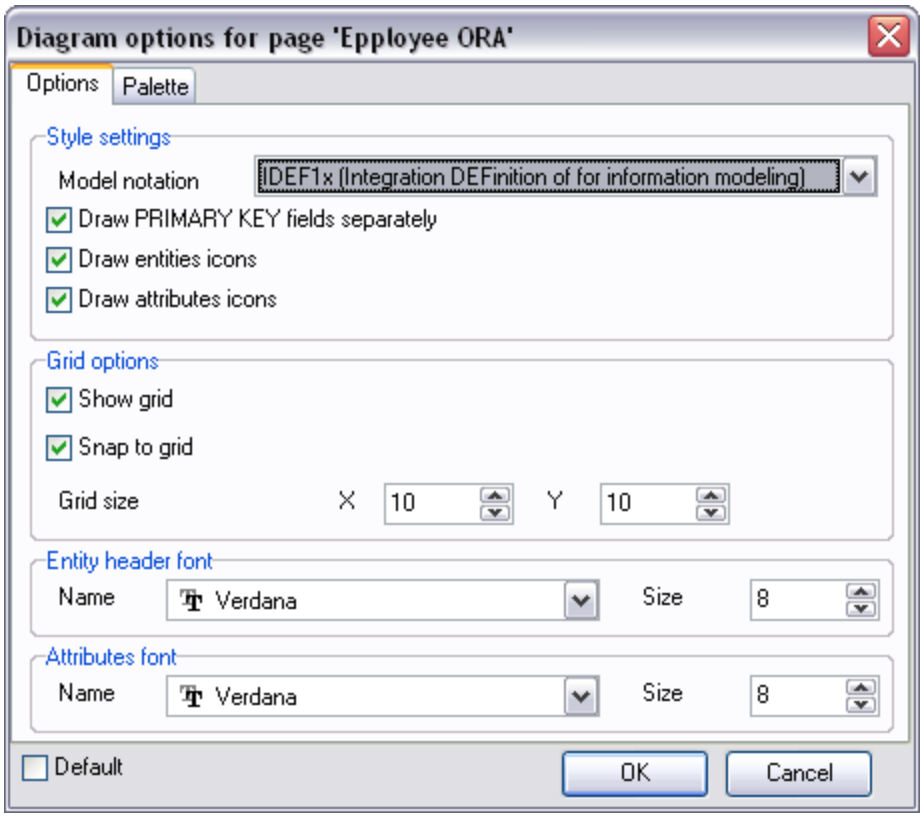

9.2.9.1 Print Preview dialog

Print Preview dialog allows you to see the diagram layout before it will be printed.

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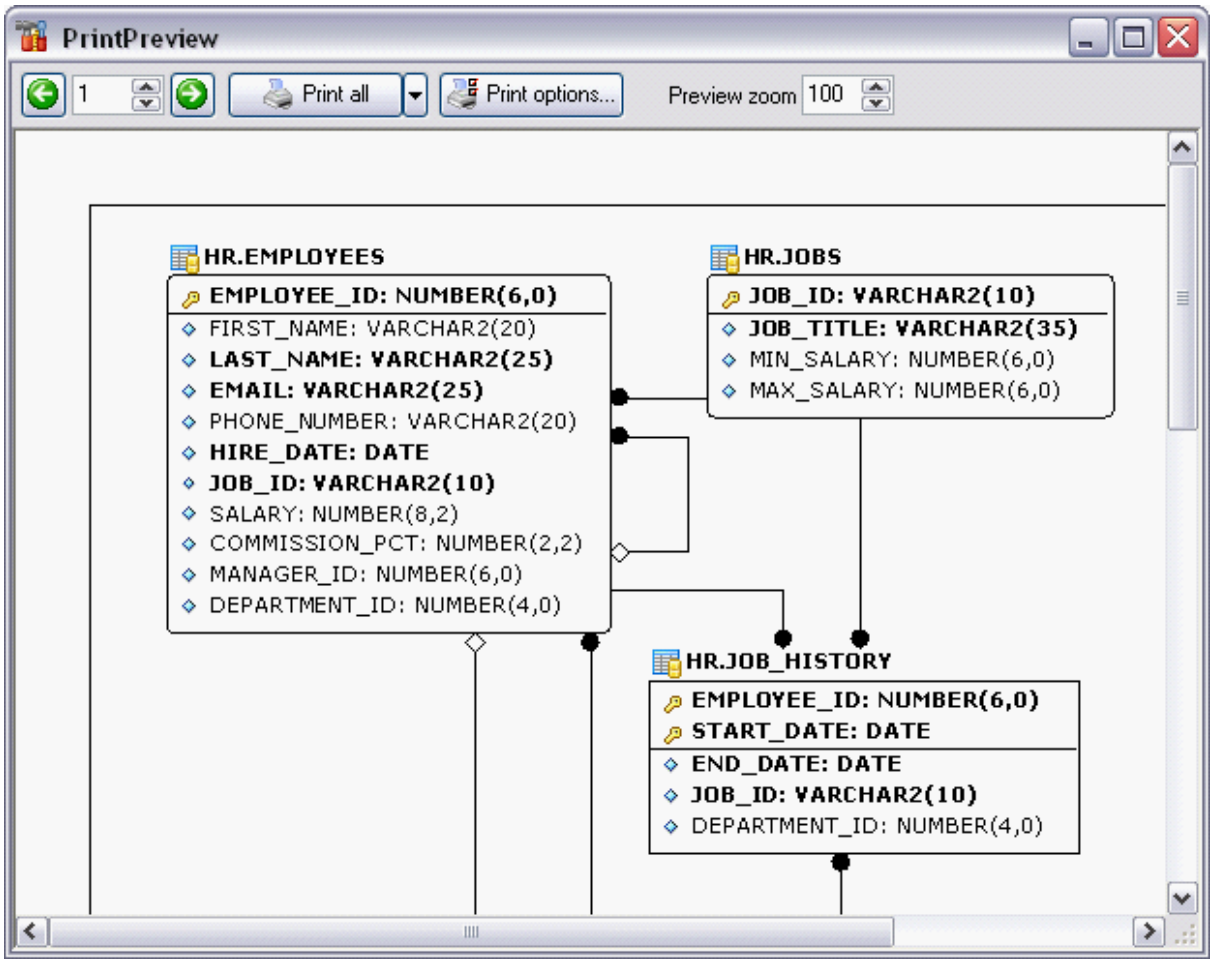

9.2.9.2 Print Setup dialog

Print Setup dialog of the **Visual Database Designer** allows you to:

- Choose the desired printer;
- Specify print layout: print using defined scale factor or arrange diagram at defined number of pages horizontally and vertically;
- Specify page options: margins, headers and footers;
- Point out other print options.

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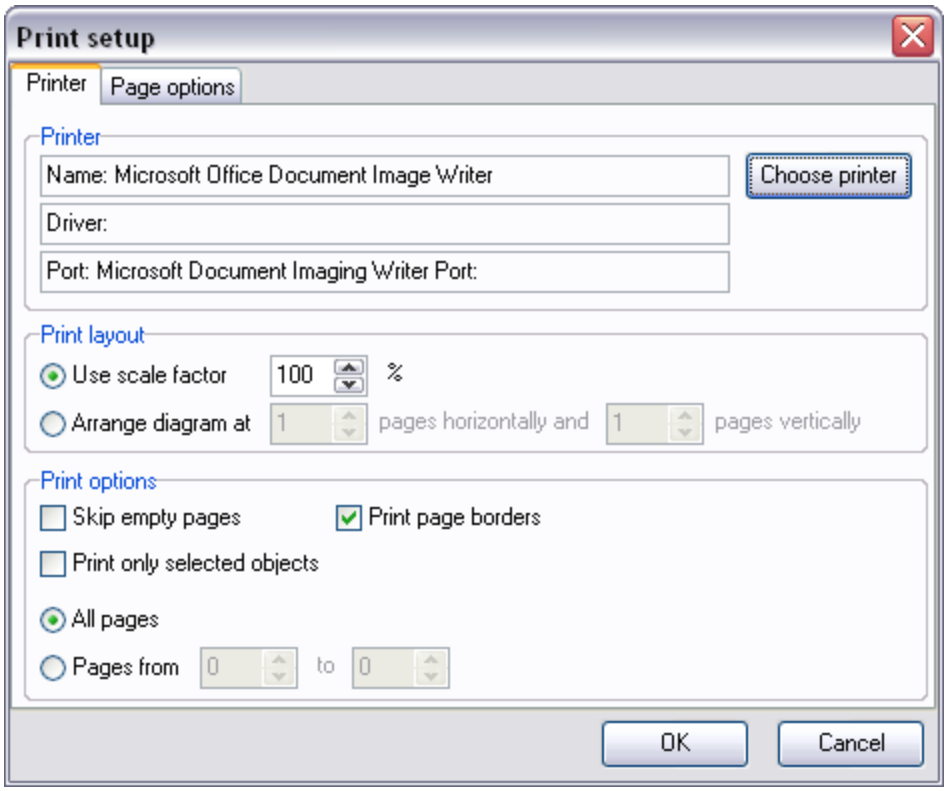
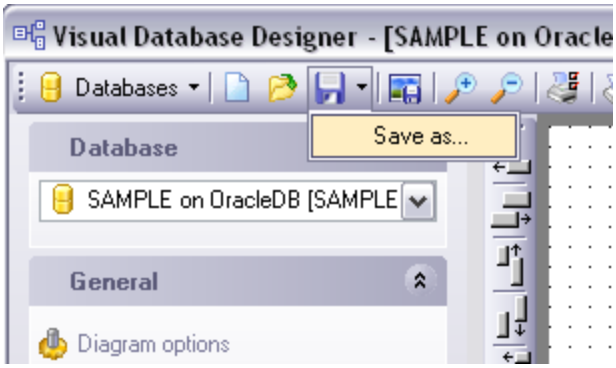


9.2.10 Saving/Loading diagram

Use **Save Diagram** and **Open Diagram** buttons on the toolbar to save the diagram for future use or to load the previously saved diagram.



9.2.11 Setting diagram options

Using this dialog you can setup behavior and look of every diagram page. See detail description of every option at the Visual Database Designer page of Environment Options dialog.

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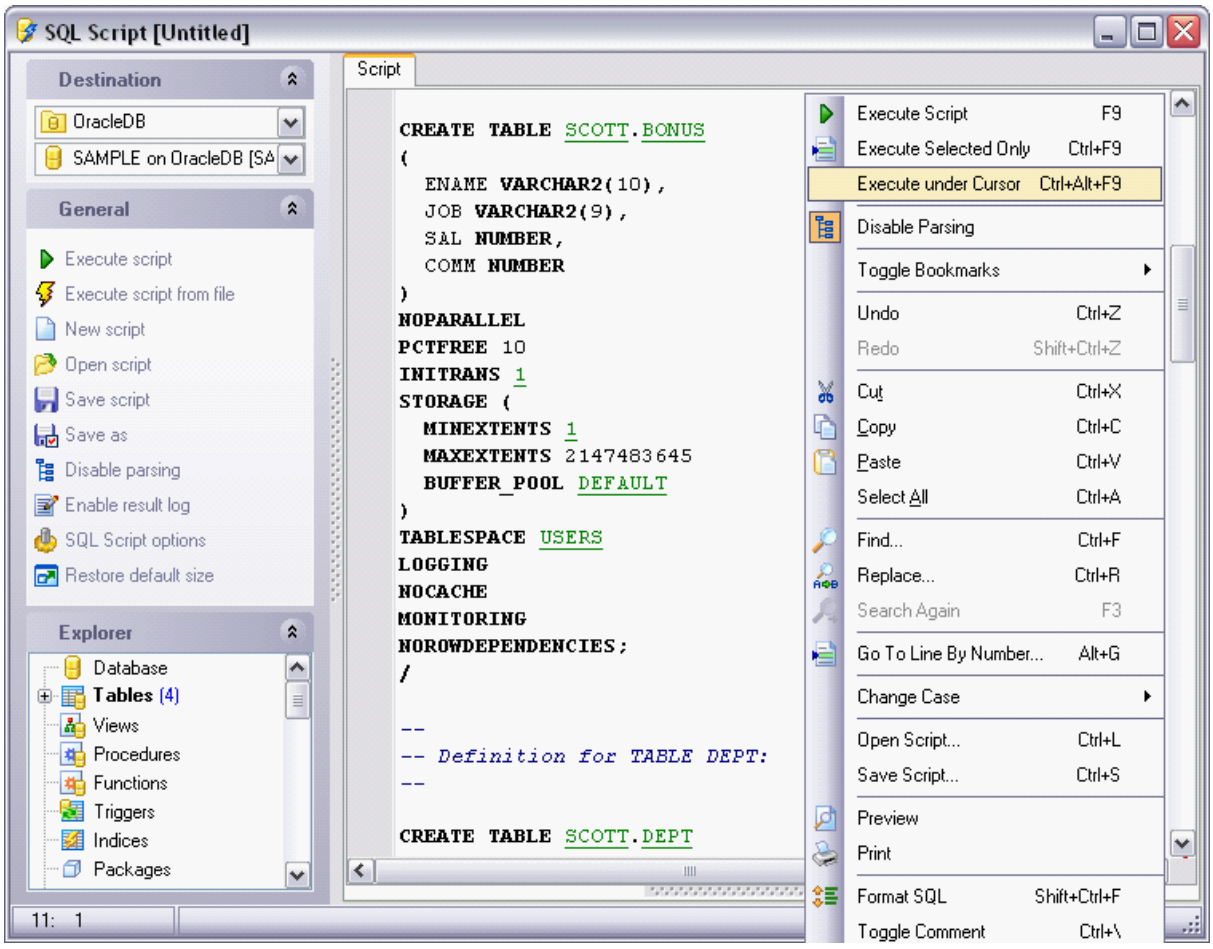
9.3 SQL Script Editor

Using **SQL Script Editor**, you can view, edit and execute SQL scripts. To open **SQL Script Editor** select the **Tools | SQL Script** menu item.

In the script area you can view and edit the SQL script text. For your convenience syntax highlight and code completion features are implemented.

Using navigation bar
Using popup menu
Using script explorer

Note: **SQL Script Editor** doesn't show SELECT query results. Please use SQL Editor for that purpose instead.



9.3.1 Using navigation bar

The **navigation bar** at the left allows you to:

- Select the database for the script.

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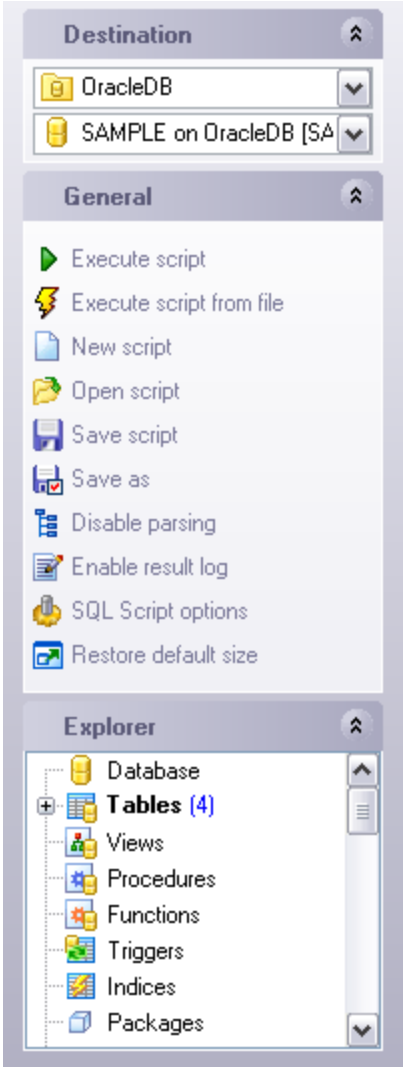
- Execute the script.
- Create a new blank script.
- Load a script from a file or save a script to file.
- Disable parsing the statements.
- Enable logging the results.
- Configure SQL Script Editor within the Environment Options dialog.
- Bring the window to its default size.
- Navigate between the statements in the script using the Explorer.



9.3.2 Using popup menu

The **popup menu** of the edit area contains standard functions for working with the text (Cut, Copy, Paste, Find, Replace, Toggle Bookmarks, etc.) and also functions for processing the script, which allow you to save/load script to/from file, and preview/print script.

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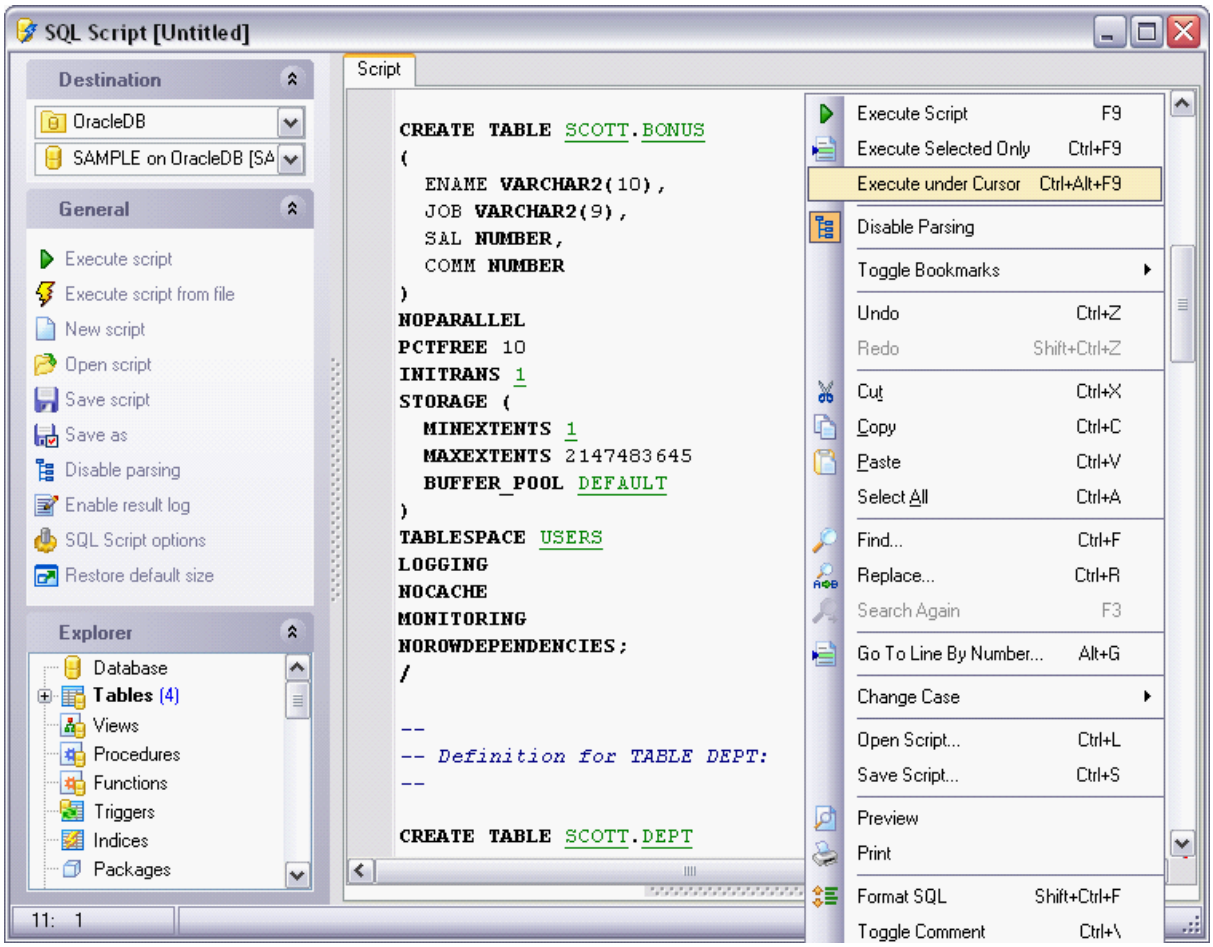

9.3.3 Using script explorer

The **Explorer** group on the navigation bar displays the tree of objects, used in the current script and allows you to get to the needed script fragment quickly by clicking the object in the tree.

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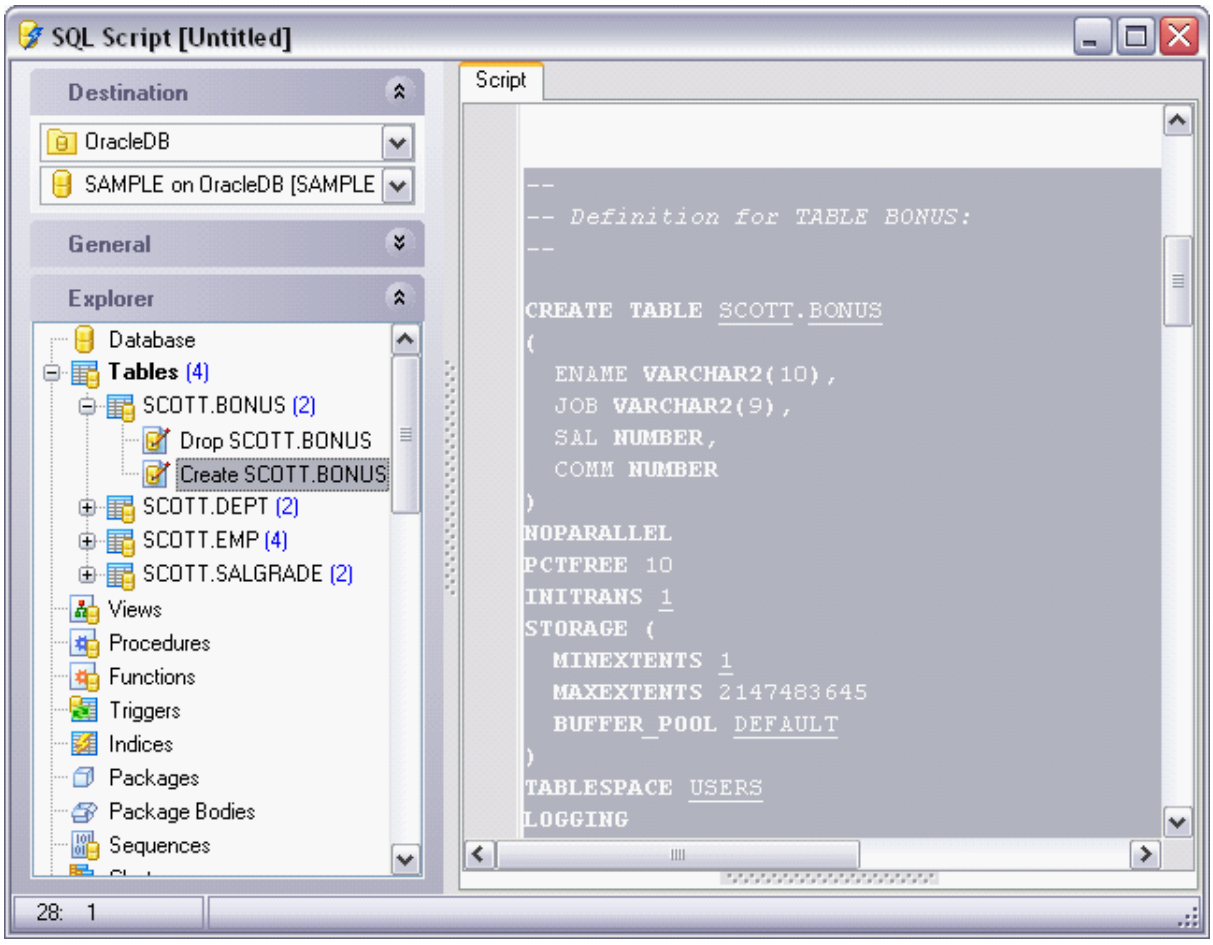

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9.4 Extract Database Wizard

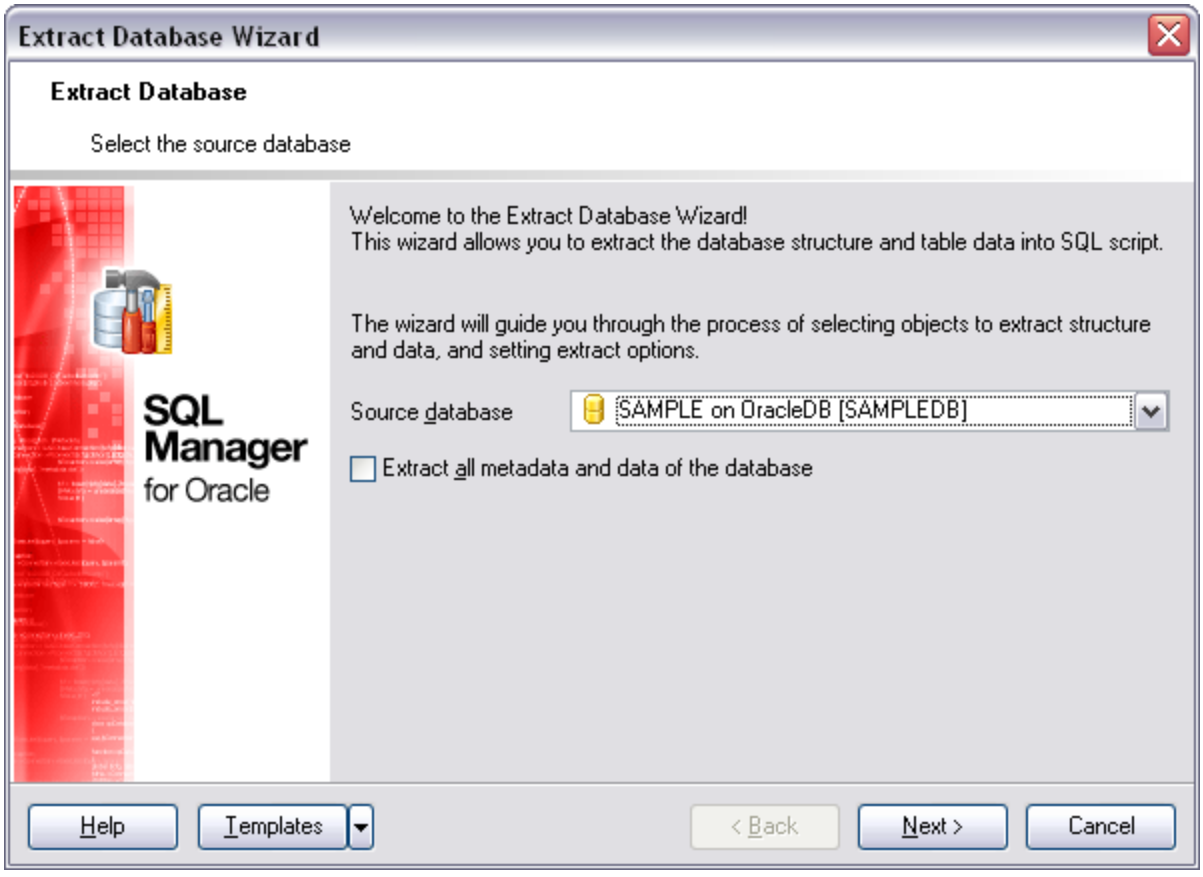
Using the **Extract Database Wizard** you can extract database objects and data to the SQL script, e.g. for backup purposes. To open this wizard, select the **Tools | Extract Database** menu item.

Use the **Templates...** button to save the wizard configuration for future use or to load the previously saved configuration for faster extract.

Selecting database to extract
Specify destination script file name
Selecting components to extract
Selecting database objects to extract their structure
Selecting database objects to extract their data
Customizing script options
Using templates

See also:

Export As SQL Script


Extract Database Wizard
Extract Database
Select the source database
Welcome to the Extract Database Wizard!
This wizard allows you to extract the database structure and table data into SQL script.
The wizard will guide you through the process of selecting objects to extract structure and data, and setting extract options.
SQL Manager for Oracle
Source database
SAMPLE on OracleDB [SAMPLEDB]
Extract all metadata and data of the database
Help
Templates
< Back
Next >
Cancel

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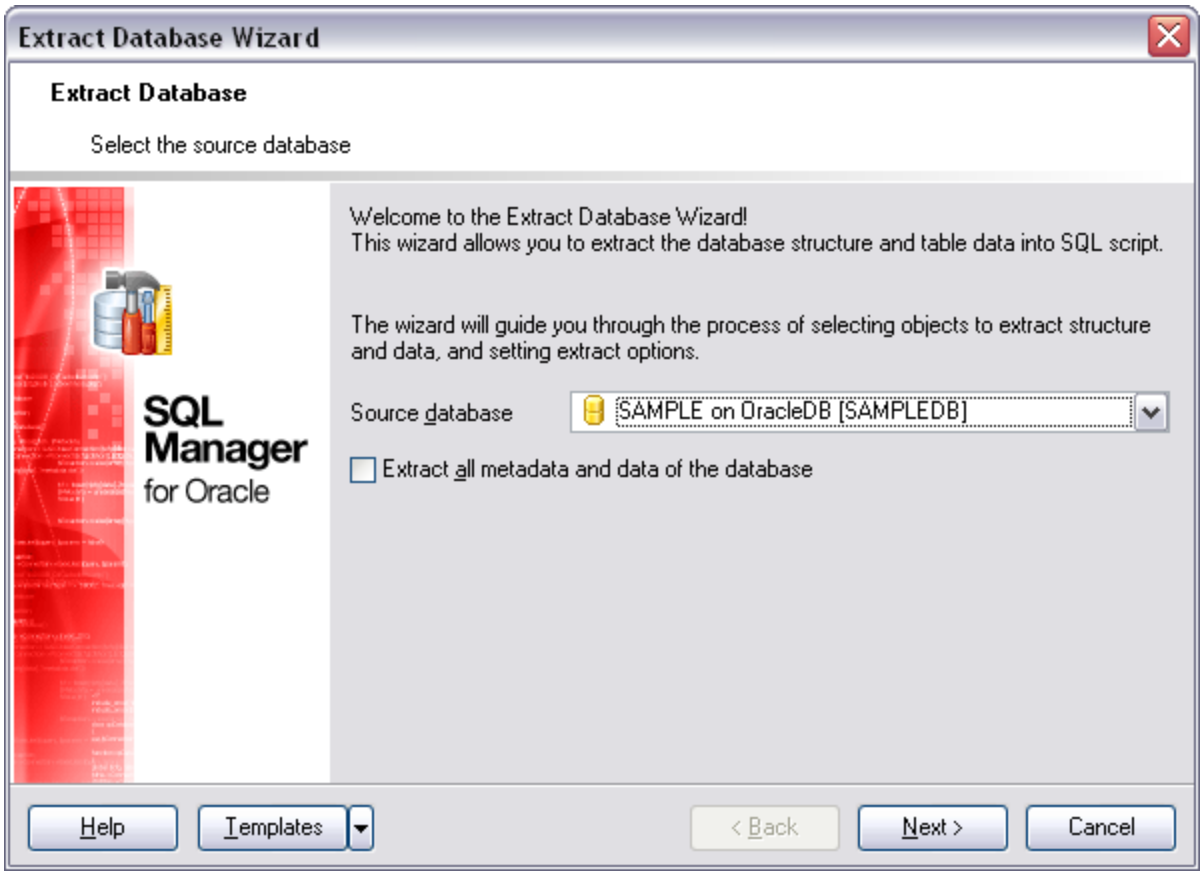
9.4.1 Selecting source database

Select the **source database** to extract. Check **Extract all metadata and data of the database** option, if needed, to simplify the wizard.


Extract Database Wizard
Extract Database
Select the source database
Welcome to the Extract Database Wizard!
This wizard allows you to extract the database structure and table data into SQL script.
The wizard will guide you through the process of selecting objects to extract structure and data, and setting extract options.
SQL Manager for Oracle
Source database
SAMPLE on OracleDB [SAMPLEDB]
Extract all metadata and data of the database
Help
Templates
< Back
Next >
Cancel

9.4.2 Specifying destination file name

Choose whether to load generated script to SQL Script Editor or to save this script to a file.
Specify destination file name in case of saving script to a file.

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9.4.3 Selecting components to extract

Select what to copy - database objects, table data, or both.

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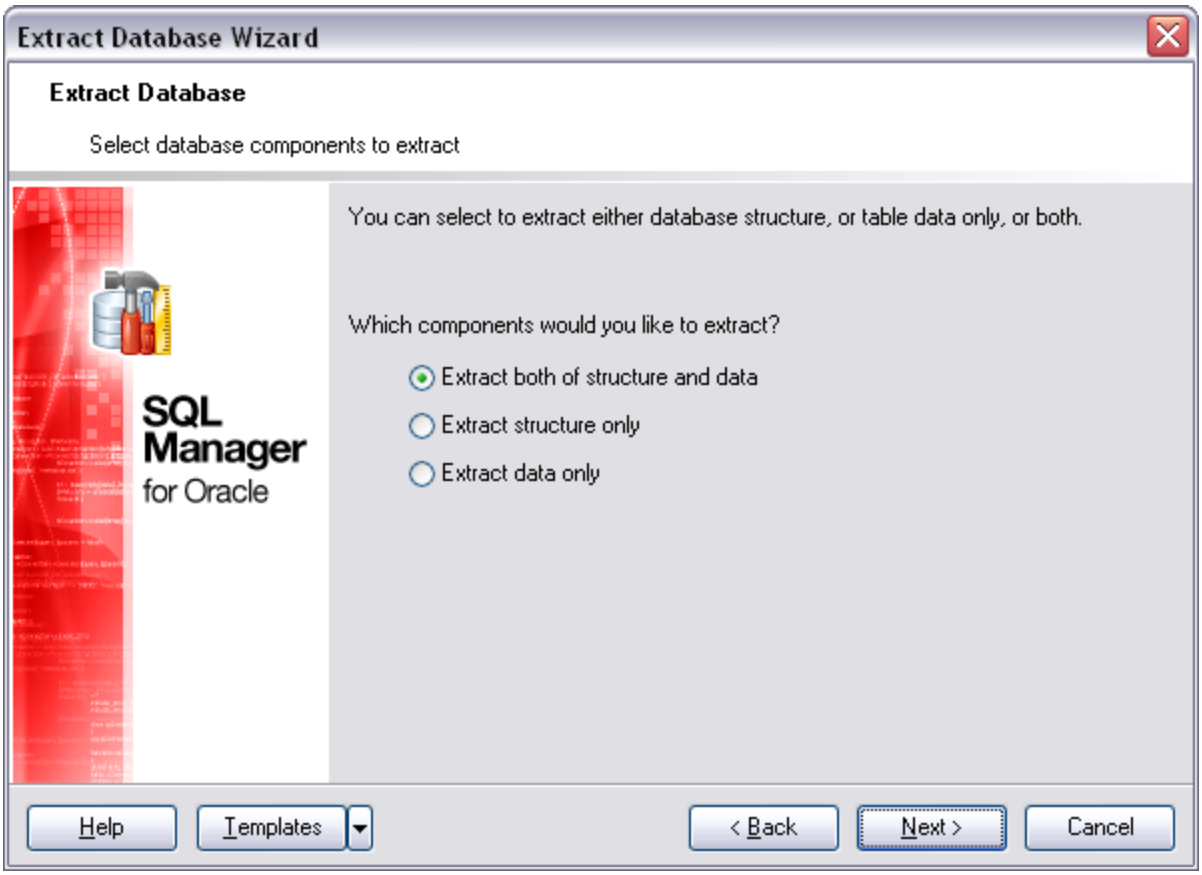
Extract Database Wizard
Extract Database
Select database components to extract
You can select to extract either database structure, or table data only, or both.
Which components would you like to extract?
Extract both of structure and data
Extract structure only
Extract data only
SQL Manager for Oracle
Help
Templates
< Back
Next >
Cancel

9.4.4 Setting BLOB options

Set the desirable extract options for BLOBs. Select whether the BLOBs should be extracted as strings or to a file. In that case please specify destination file name and location. You may use optional file compression as well.

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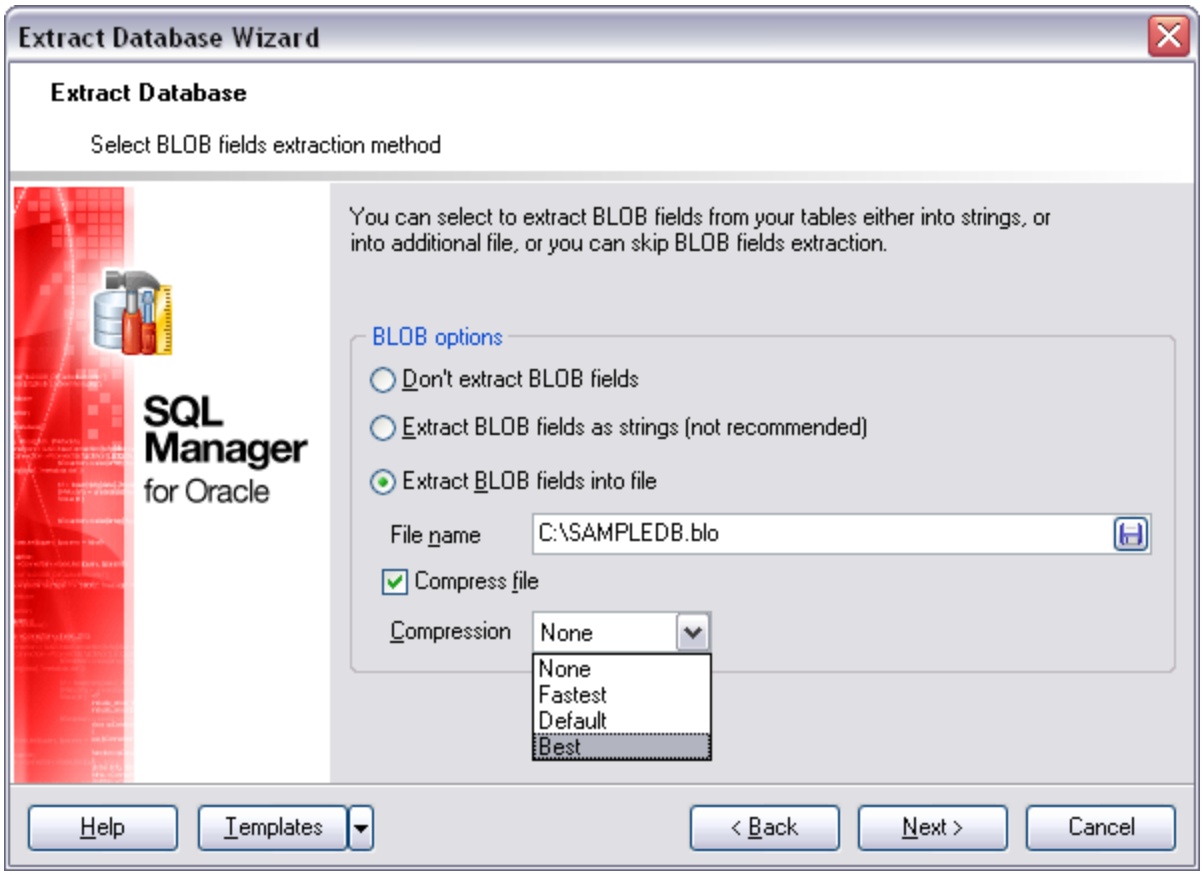

9.4.5 Selecting objects to extract their structure

Select database object to copy or chose **Extract all objects** option to copy all objects from the database. Note that this step is not available if you select the **Extract data only** mode on selecting what copy.

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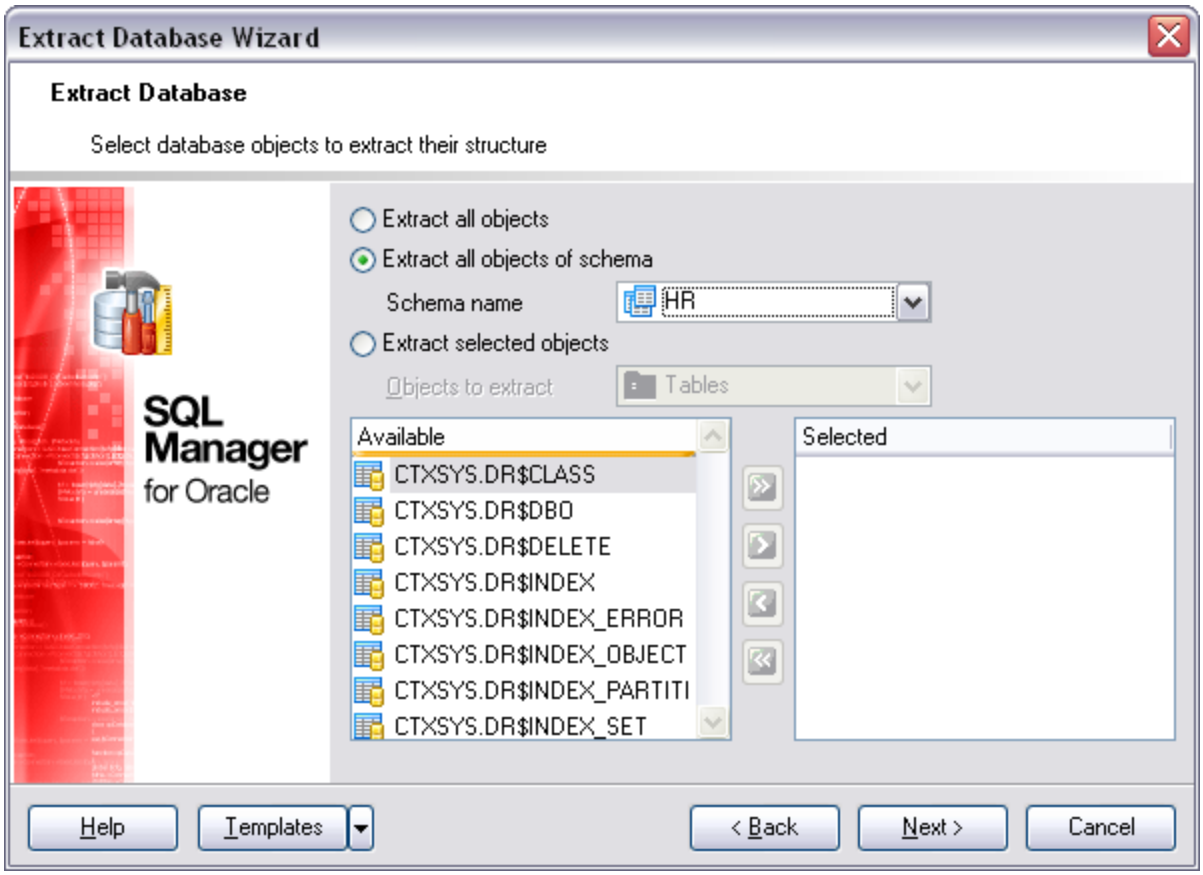

9.4.6 Selecting objects to extract their data

Select tables to copy their data by moving them from the **Available tables** list to the **Selected tables** one. Note that this step is not available if you select the **Extract structure only** mode on selecting what copy.

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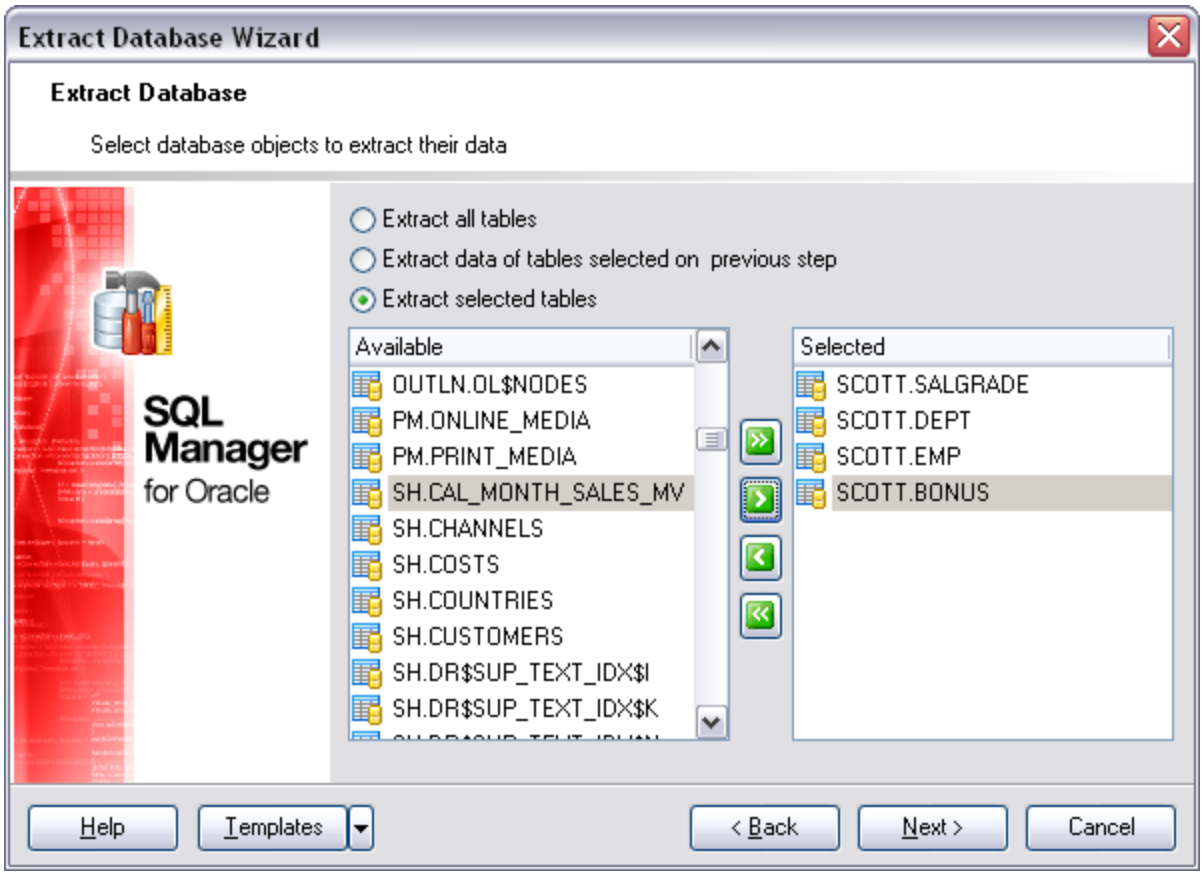

9.4.7 Customizing script options

This step allows you to customize structure and data copying. Click **Finish** button to start copying.

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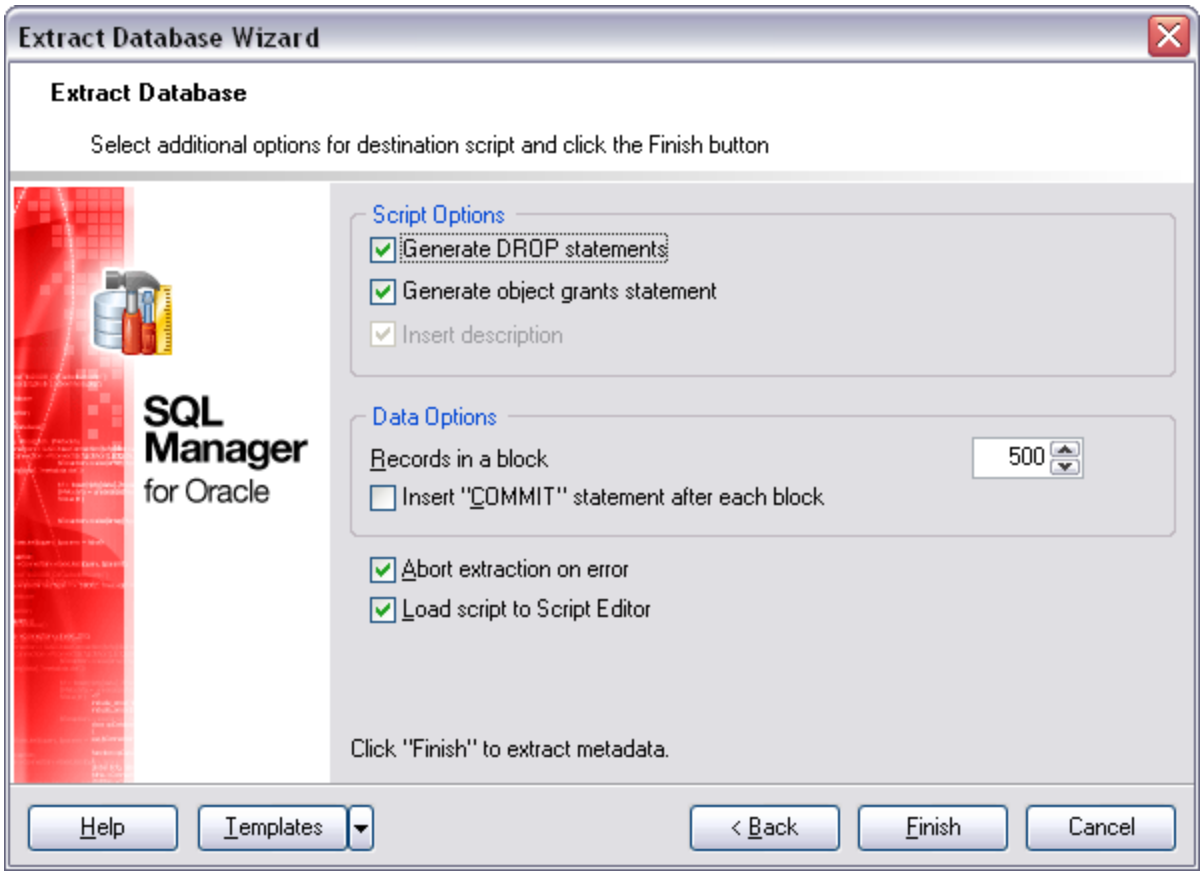

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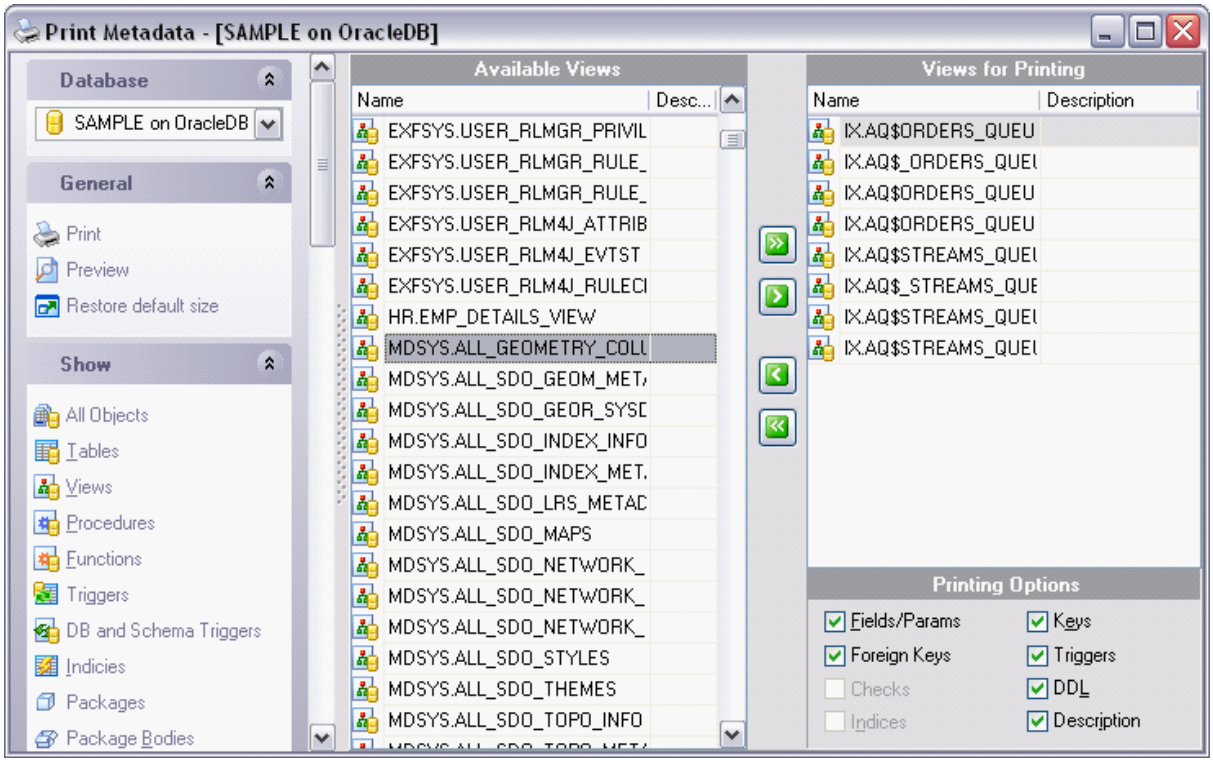
9.5 Print Metadata

Print Metadata allows you to print the metadata of any database object. To open it select **Tools | Print Metadata** menu item.

Select the type of the database objects to print using buttons at the navigation bar. Move the objects from the **Available objects** list to the **Objects for printing** list using arrow buttons, by double-clicking or dragging them (multiple objects can be selected using buttons *Ctrl* and *Shift*).

See also:

HTML Report



9.5.1 Using navigation bar

The **navigation bar** at the left allows you to:

- Select the database for the report.
- Print metadata for selected objects.
- Preview the report.
- Bring the window to its default size.
- Filter database objects by type.

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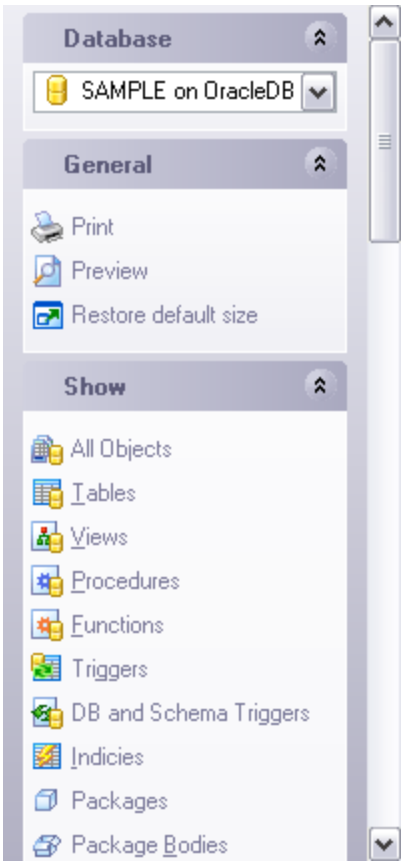

9.5.2 Printing options

If you select table(s) among the tables for printing, Printing Options appear at the bottom.

Fields/Params, **Foreign Keys**, **Checks**, **Indices**, **Triggers**, **DDL** and **Description**. Specify which items should be printed.

Note that you are able to make a preview of the report and print metadata for selected objects; select the corresponding items of the navigation bar.

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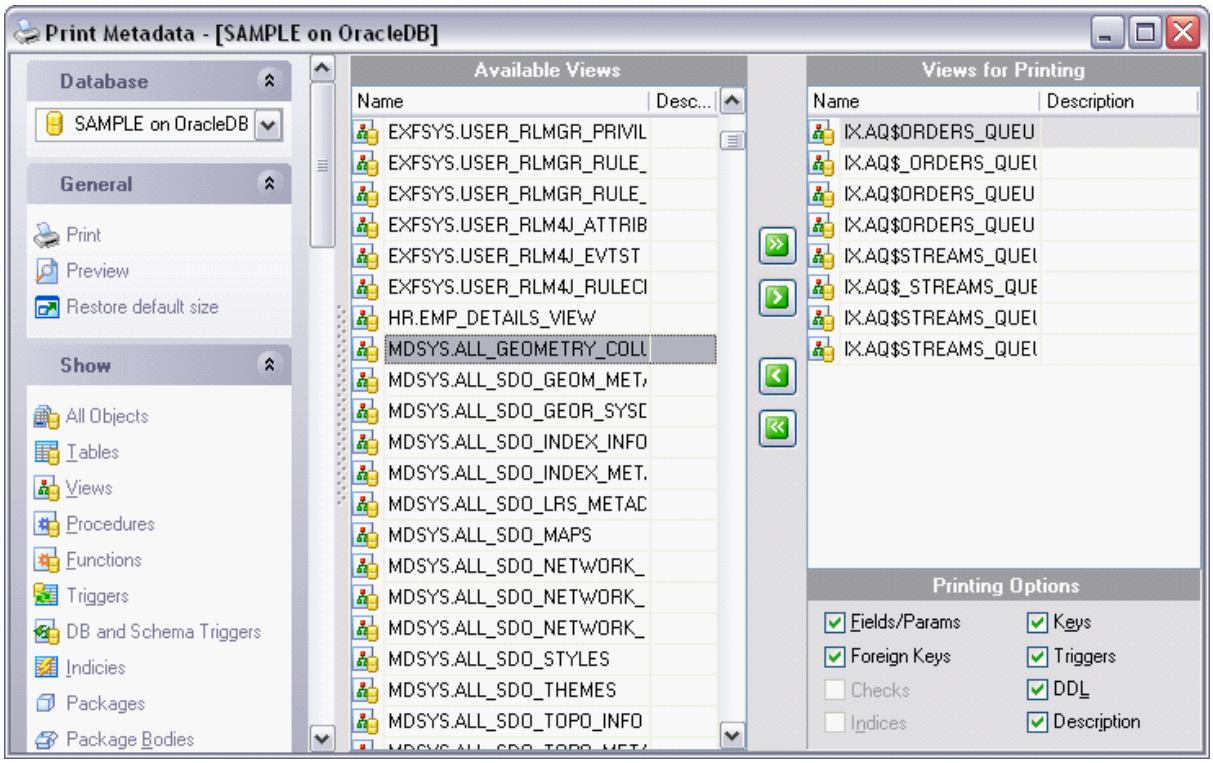

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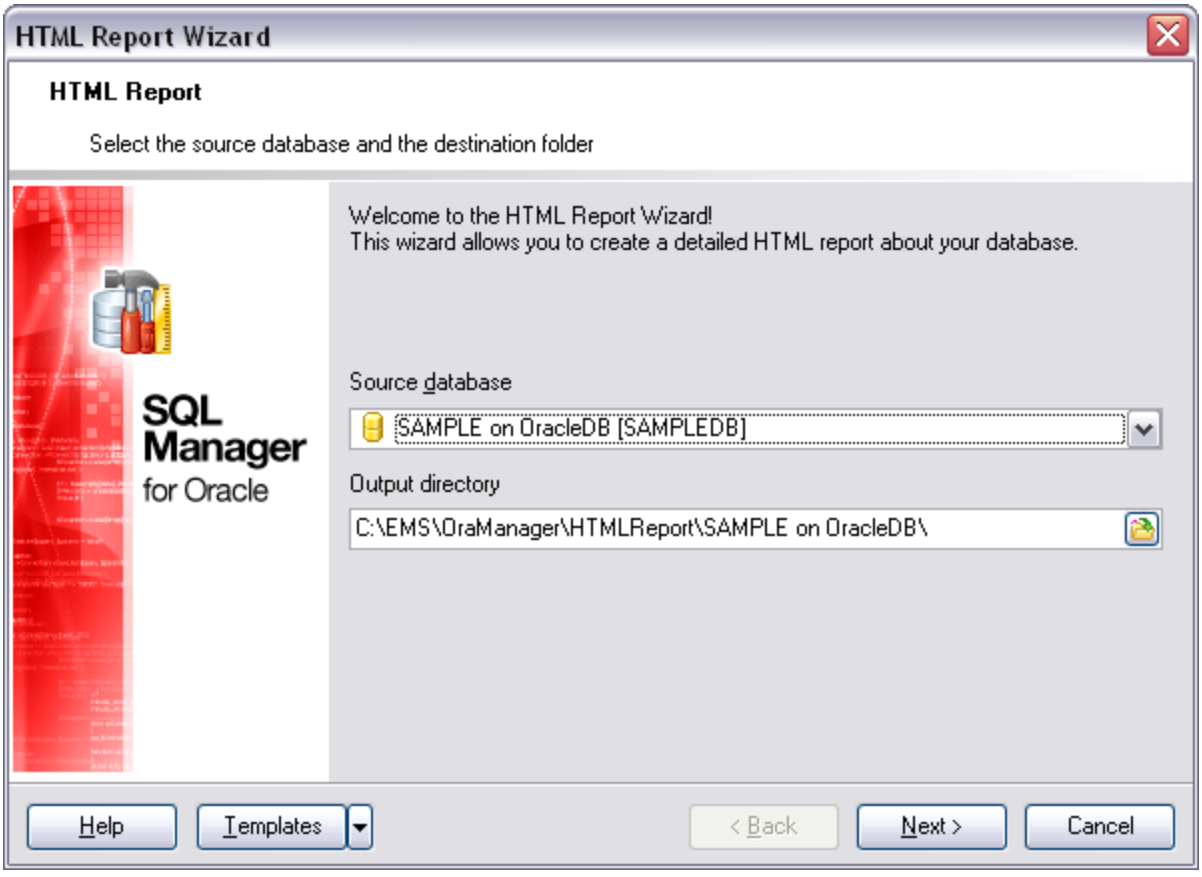
9.6 HTML Report Wizard

HTML Report wizard allows you to generate a detailed HTML report about the selected database metadata. To open **HTML Report wizard** select the **Tools | HTML Report** menu item.

- Select source database and output directory
- Select type of database objects to extract
- Specify Cascading Style Sheet for the report
- Set additional parameters
- Using templates

See also:

Export Data Dialog
Print Metadata



9.6.1 Select database and directory

Select the **source database** for the report. Select **output directory** for storing the result HTML files.

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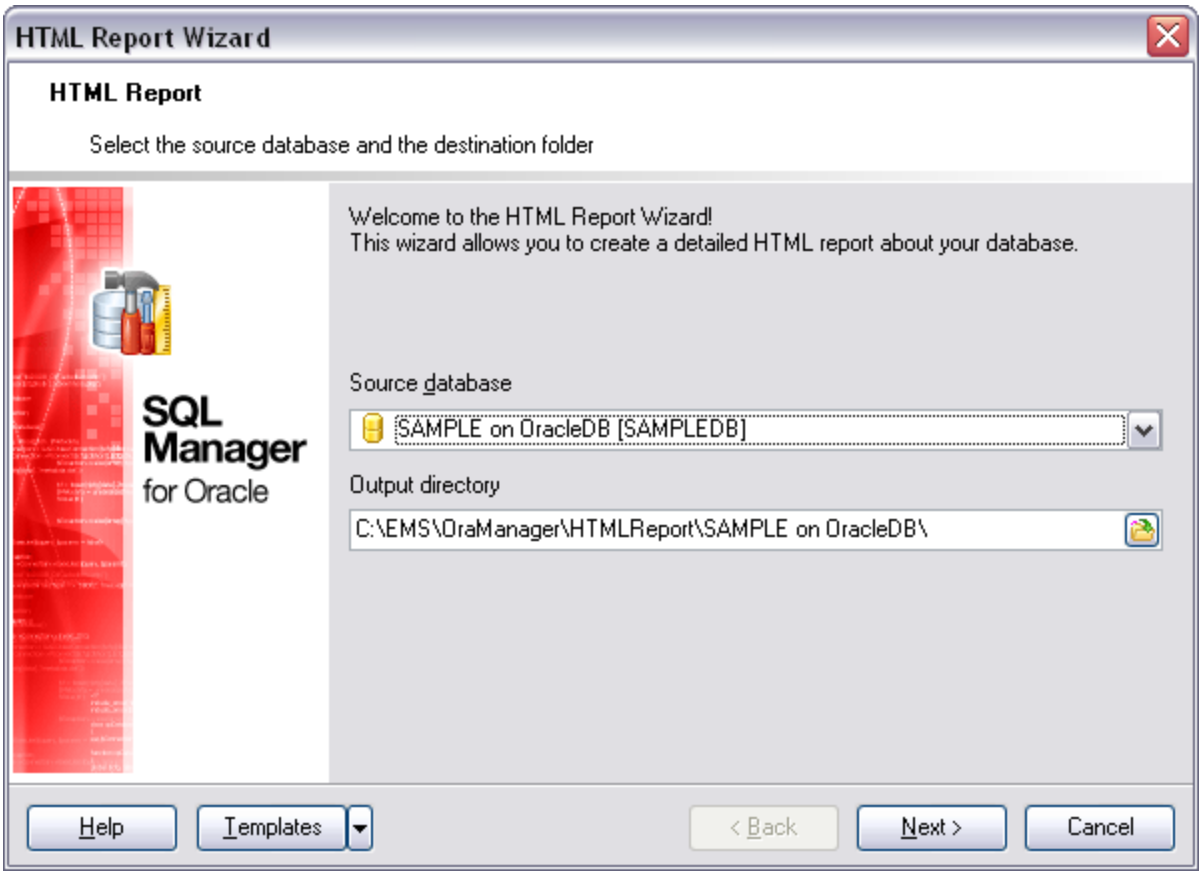

9.6.2 Select type of database objects

Select database ojbect types to include in the report.

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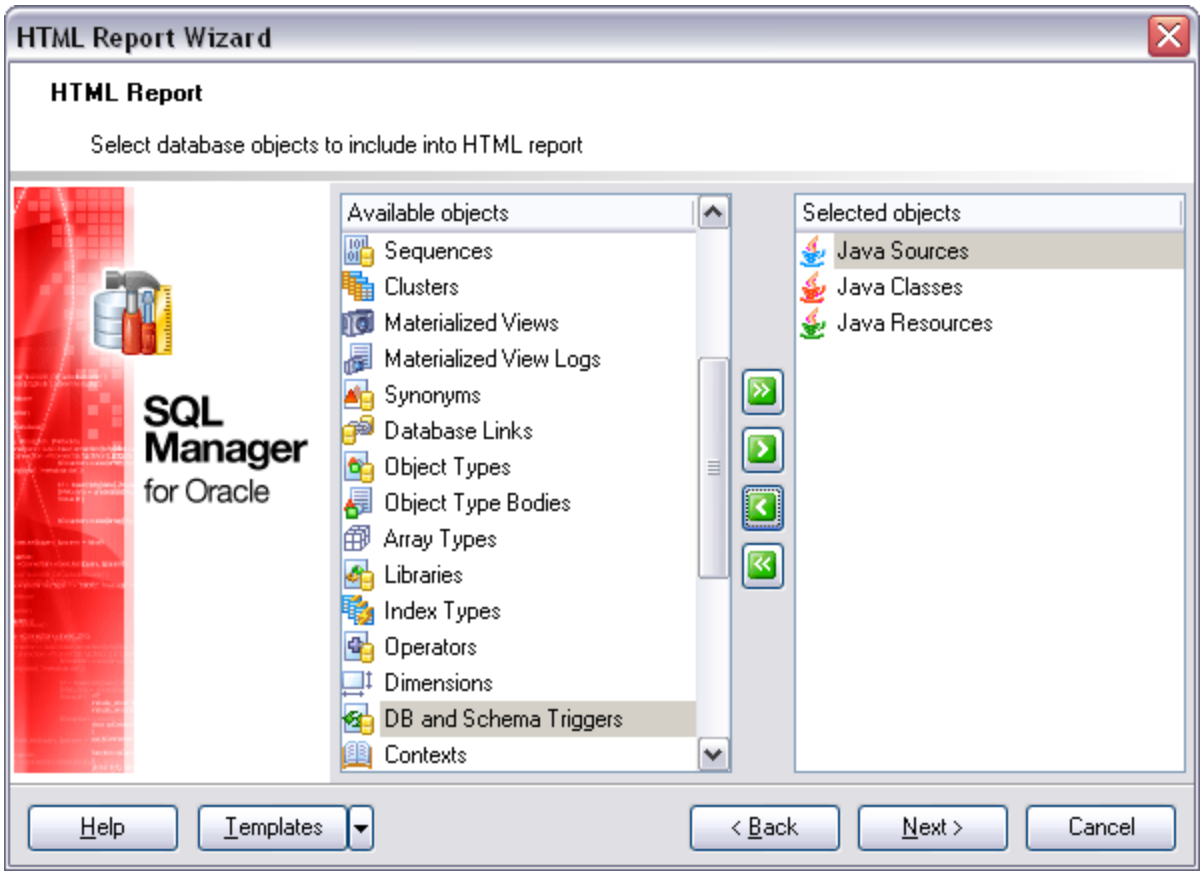

9.6.3 Selecting schema

Choose the schema(s) from which the metadata of objects should be extracted. Note that the objects are selected at the Select type of database objects step.

9.6.4 Specify report style

Edit a CSS file that would be used in the result report.

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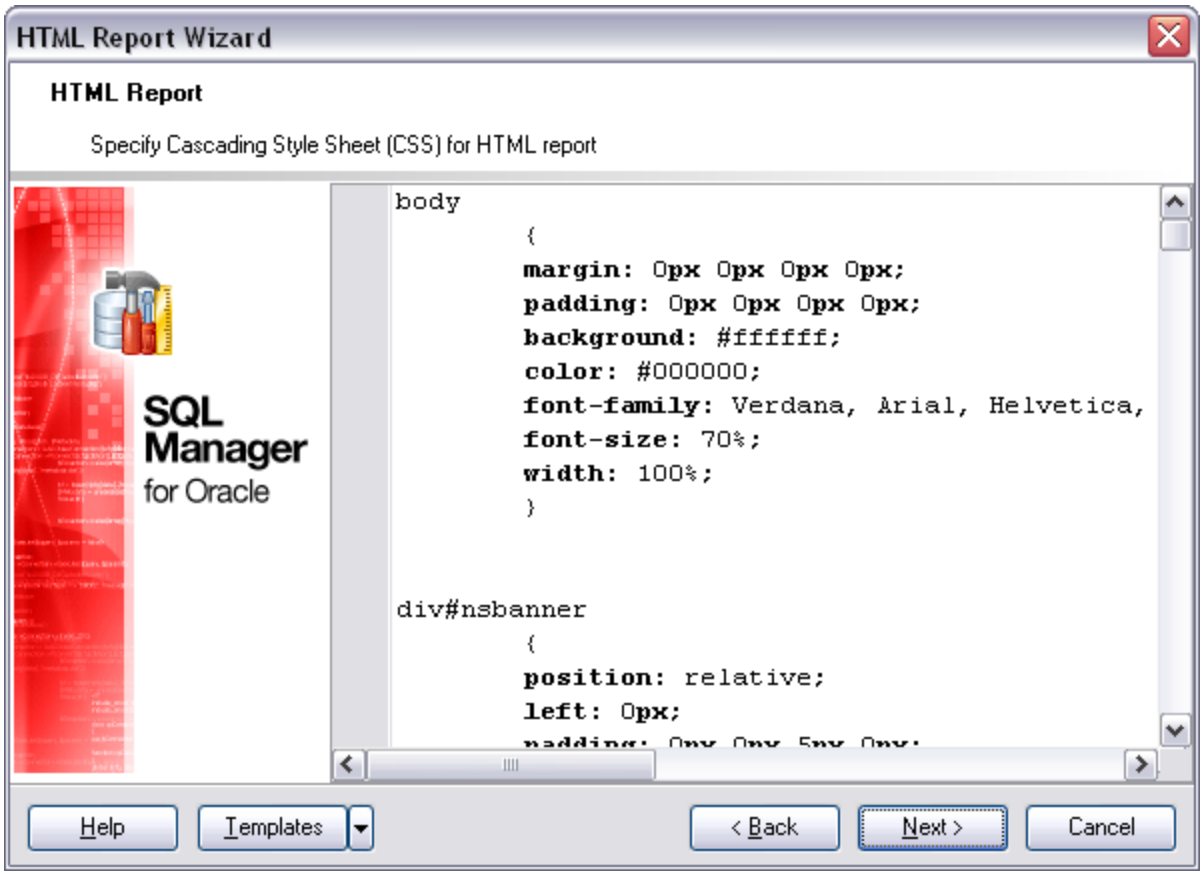

9.6.5 Set additional parameters

Set the HTML Report additional parameters.

Charset
Set the character set for the result files.

☑ **Show report after generating**
This option opens the result report in your default browser after generating.

You can also set an optional text to header and footer of the result HTML report.

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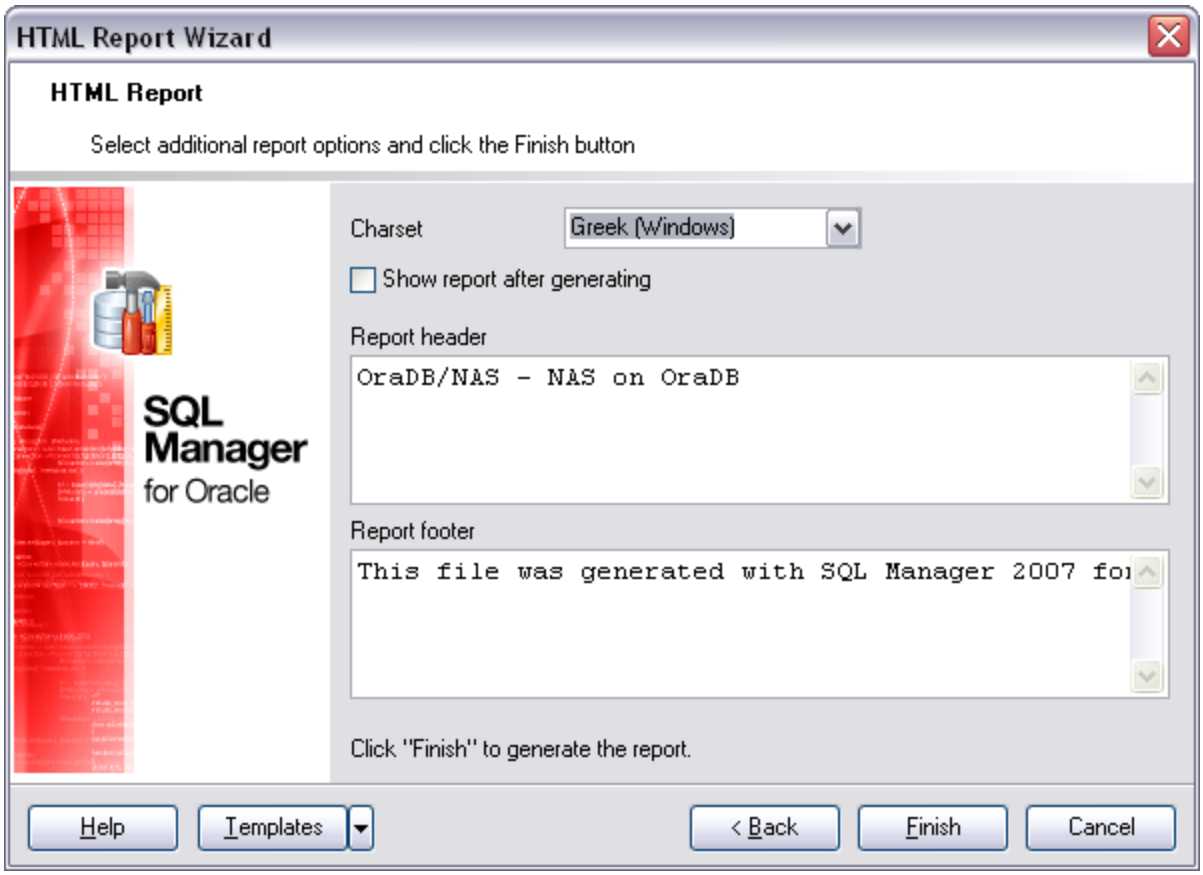

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9.7 Report management

SQL Manager 2007 for Oracle provides Report Designer for creating powerful reports, Create Report Wizard to simplify the process of creating report, and Report Viewer to view finished reports.

Reports can be stored either in the database ('*xxx*reports' table will be created to store them) or in the folder on your hard drive, specified at the Edit Database Registration Info dialog on the Directories page.

9.7.1 Create Report Wizard

Using the **Create Report Wizard** you can create a report blank in a definite style containing required datasets, bands and fields on them.

To open the dialog select the **Database | New Object...** menu item, then select **Report** in the dialog.

Hint: To create new report you can also right-click the **Reports** node of the explorer tree and select the **New Report...** item from the popup menu.

- Specifying report name and options
- Selecting report bands
- Selecting report style
- Specifying paper settings
- Specifying margins
- Specifying other page settings

See also:

Report Designer
Report Viewer

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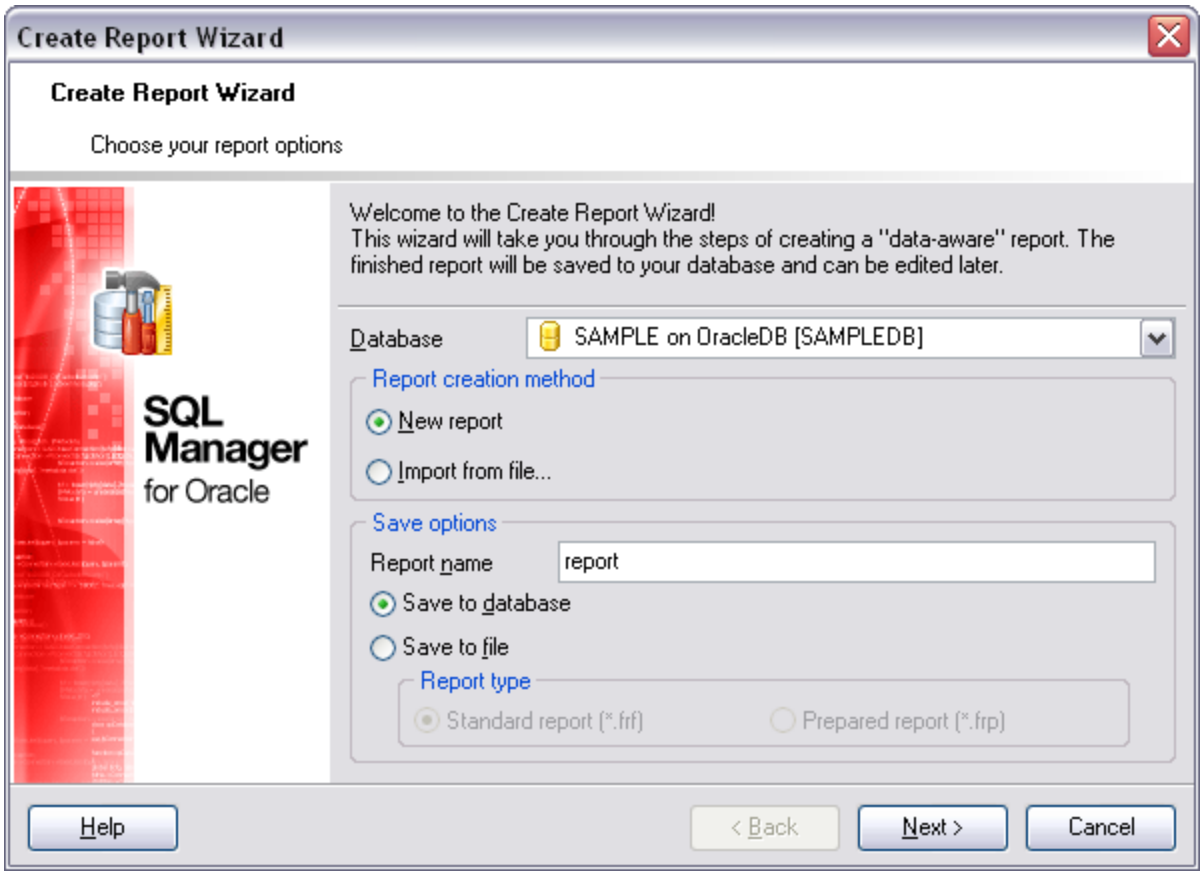

9.7.1.1 Specifying report name and options

Select the database for adding a report. Choose the action you need to perform: create new report or import the existing report from file. Set the name for a new report and specify the save options for it.

Create Report Wizard provides two variants for saving a report. If you choose **Save to database** the report will be created on the server inside the database itself. Otherwise choose **Save to file**; the standard save file dialog appears.

Click **Next** button to select report bands for a new report, or to locate the existing report.

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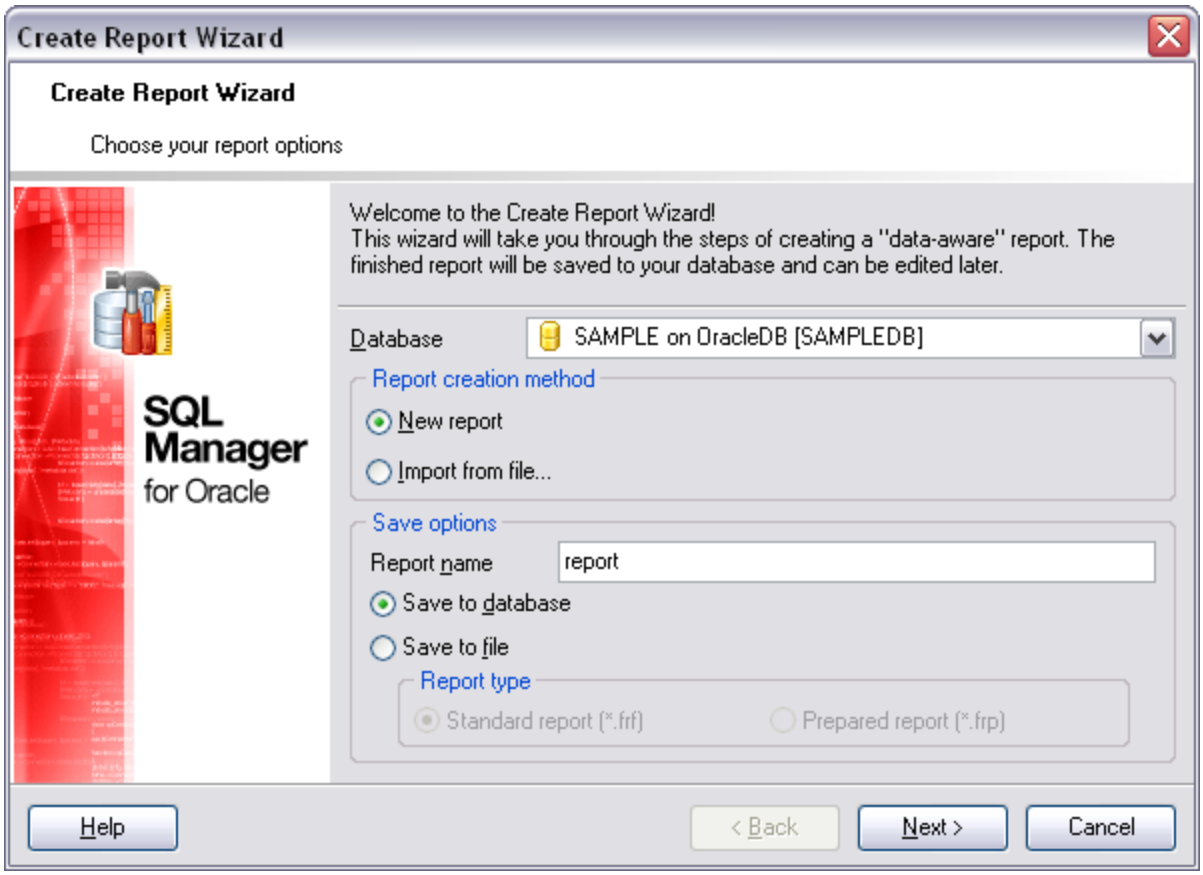

9.7.1.2 Selecting report bands

Select required bands to be placed in the report by moving them from the **Available Bands** list to the **Report Bands** one. Create datasets for 'data' bands if necessary by clicking **Edit** button.

Brief information about bands functionality is listed below. See **FastReport** help for more information.

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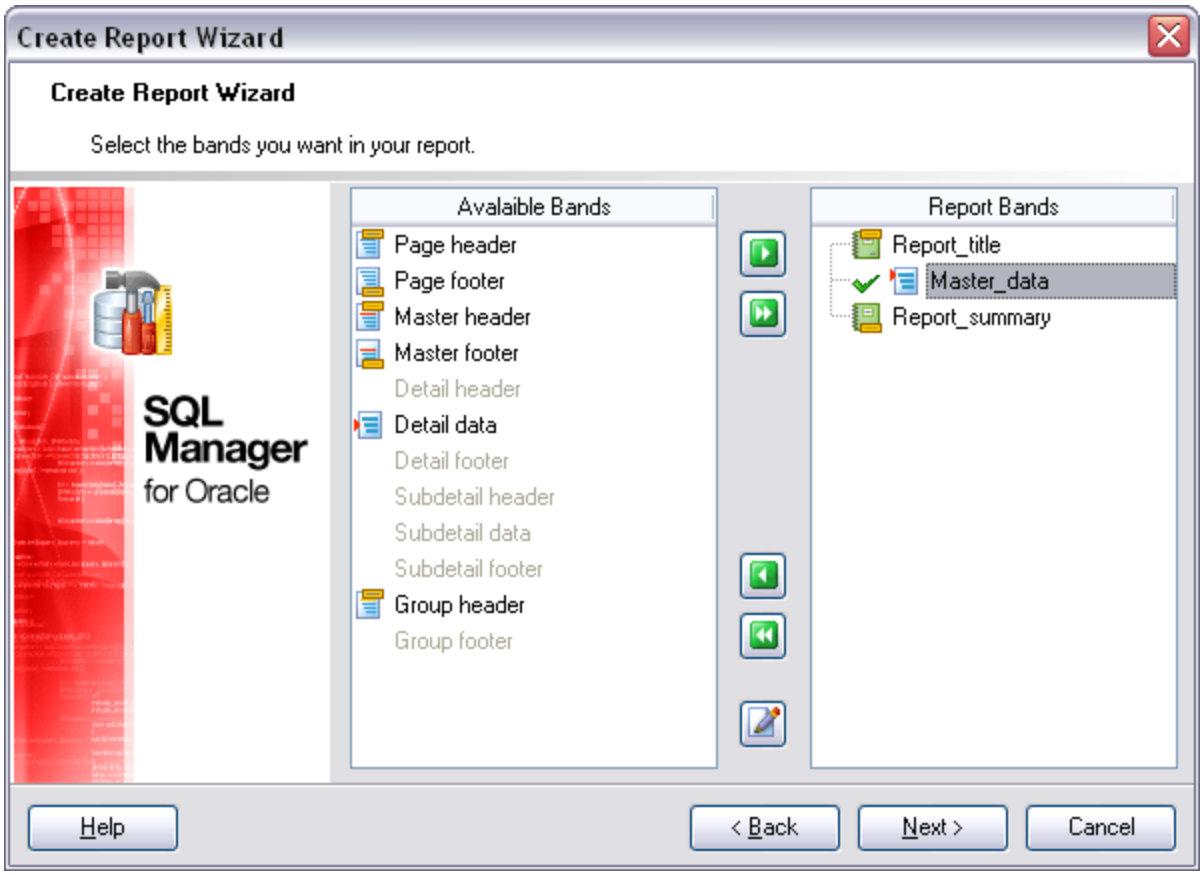

Name	Functionality
Report title	Prints once at the beginning of report
Report summary	Prints once at the end of report
Page header	Prints at the top of each page
Page footer	Prints at the bottom of each page
Master header	Prints at the beginning of master list
Master data	Data rows of master list
Master footer	Prints at the end of master list
Detail header	Prints at the beginning of detail list
Detail data	Data rows of detail list
Detail footer	Prints at the end of detail list
Subdetail header	Prints at the beginning of subdetail list
Subdetail data	Data rows of subdetail list
Subdetail footer	Prints at the end of subdetail list
Group header	Prints at the beginning of each group
Group footer	Prints at the end of each group

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9.7.1.3 Selecting report style

Select the report style by clicking one of the buttons demonstrating the future look of the report.

9.7.1.4 Specifying paper settings

Specify report options, such as paper size and orientation, page margins. Check **Open the report after the wizard has finished** option to edit generated report with Report Designer. Click **Finish** button to start report generation process.

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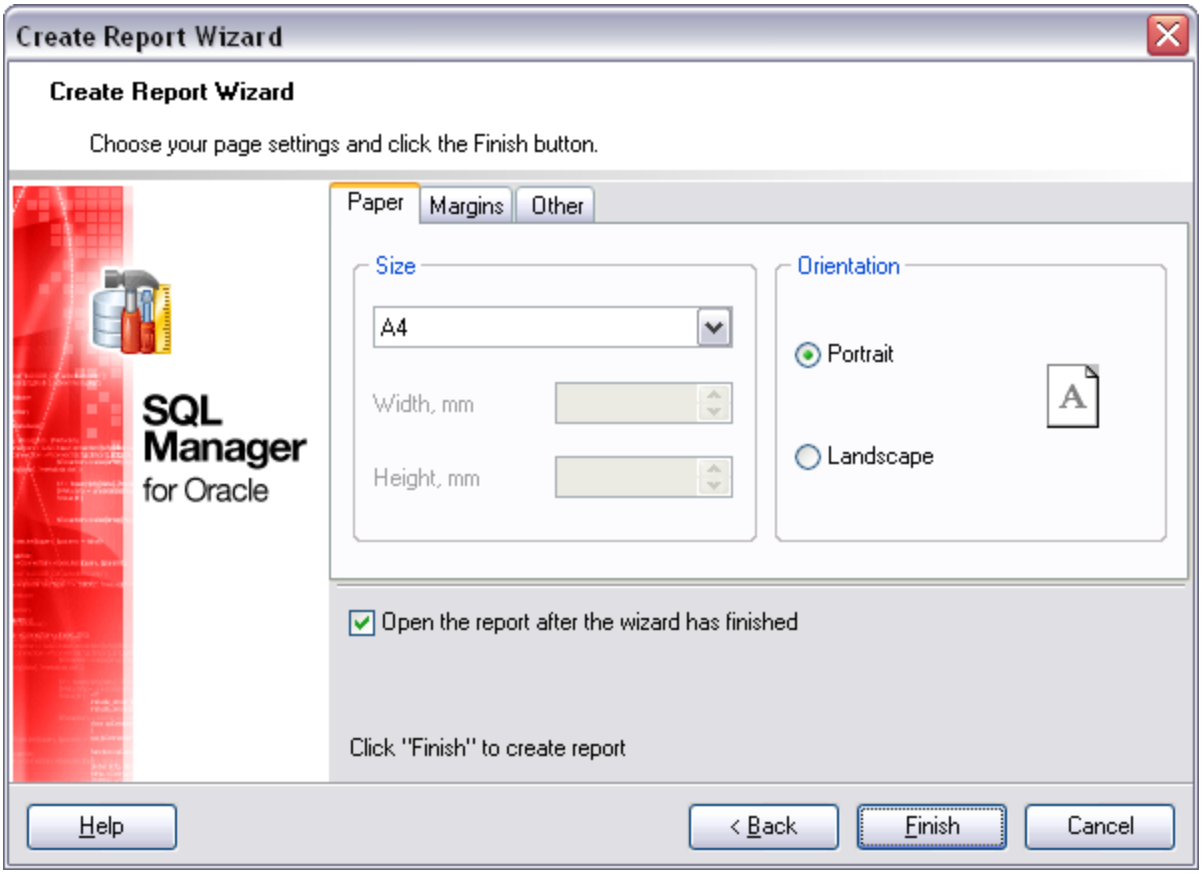

9.7.1.5 Specifying margins

Stretch to print area
If this option is checked, size of report adjusts to the print area. If this option isn't checked, you can specify exact *left*, *right*, *top* and *bottom* margins (in millimeters).

Open the report after the wizard has finished
If this option is checked, the report will be opened after creating.

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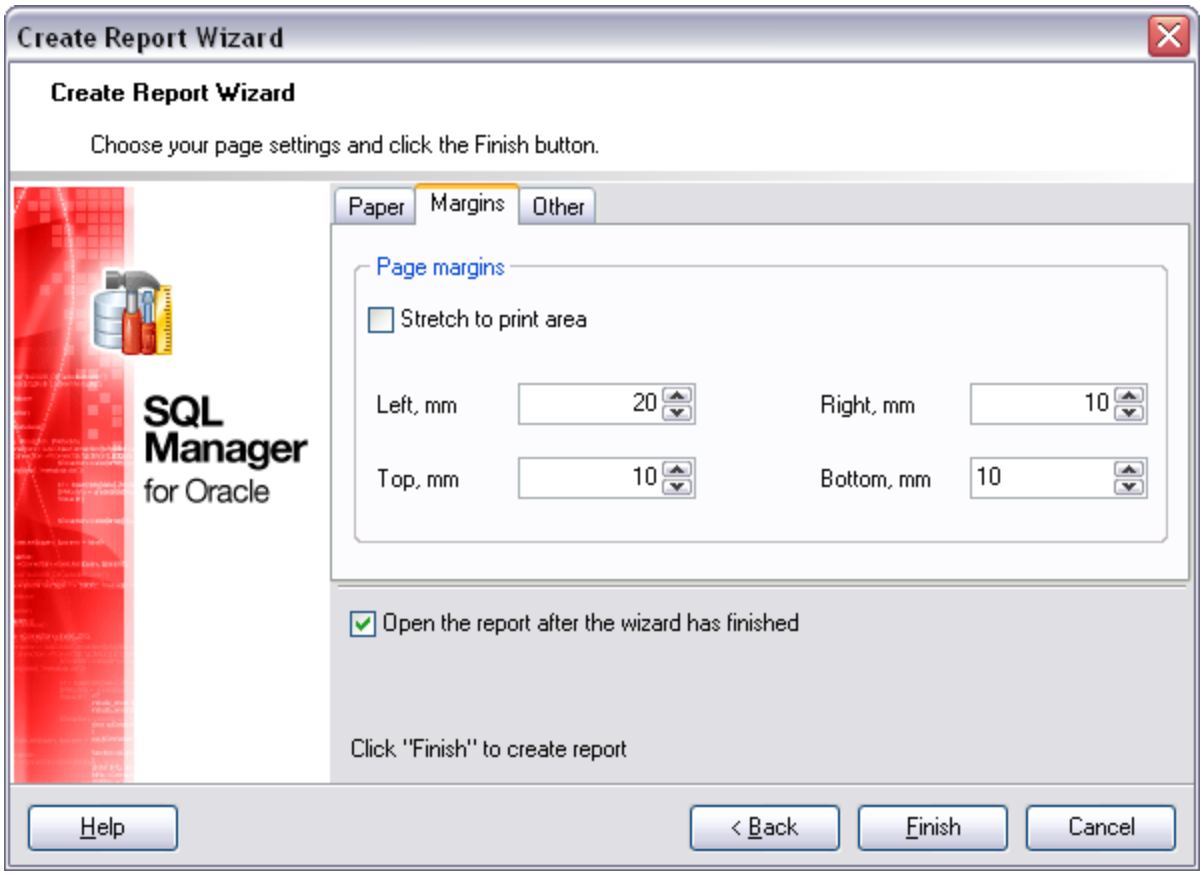

9.7.1.6 Specifying other page settings

Options

Print to previous page
This option allows to use white space on a previous page. This option can be used in case when a report template consists of several pages or when printing batch (composite) reports.

Two-pass report
If this option is selected, report's formation will be performed in two steps. During the first pass, a report is formed, and is divided into pages, but the result is not saved anywhere. During the second pass a standard report formation with saving a result in the stream is performed.

Page numbering
This option allows to print a page numbers.

Columns

Number
This parameter specifies a number of columns for multi-column reports' printing.
Gap, mm
This parameter specifies width of a gap between columns.

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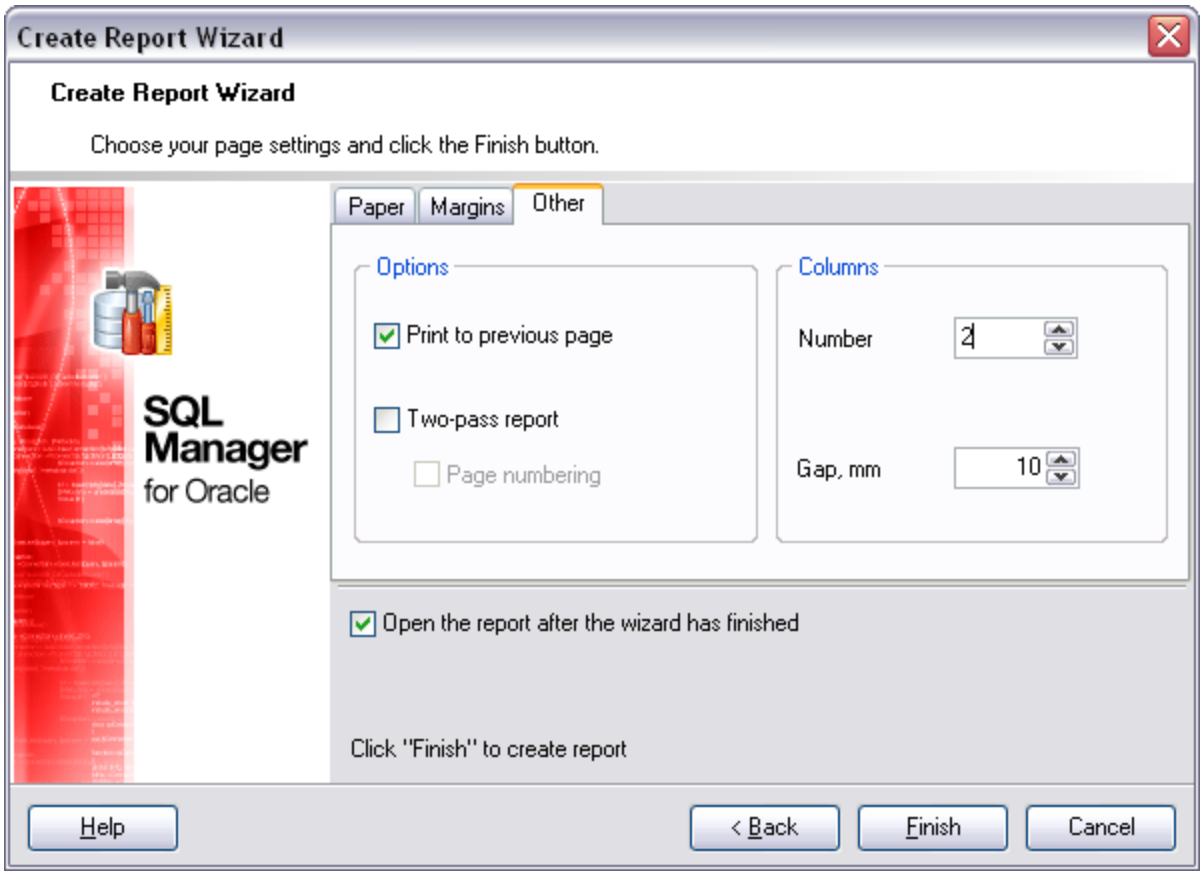
Open the report after the wizard has finished
If this option is checked, the report will be opened after creating.



9.7.2 Report Designer

The **Report Designer** allows you to create and edit reports. This tool can be opened after completion of Create Report Wizard to design a new report. To edit already existing project use the appropriate Report Viewer navigation bar item.

This module is provided by **FastReport** (http://www.fast-report.com) and has its own help system. Press **F1** key in the **Report Designer** to call the **FastReport** help.

Please find below the instruction on how to create a simple report in the **Report Designer** :

- Adding dialog form
- Adding database component
- Adding query component
- Adding fields to the report
- Viewing the report

Note: The **Object Inspector** that allows you to edit report object properties, can be

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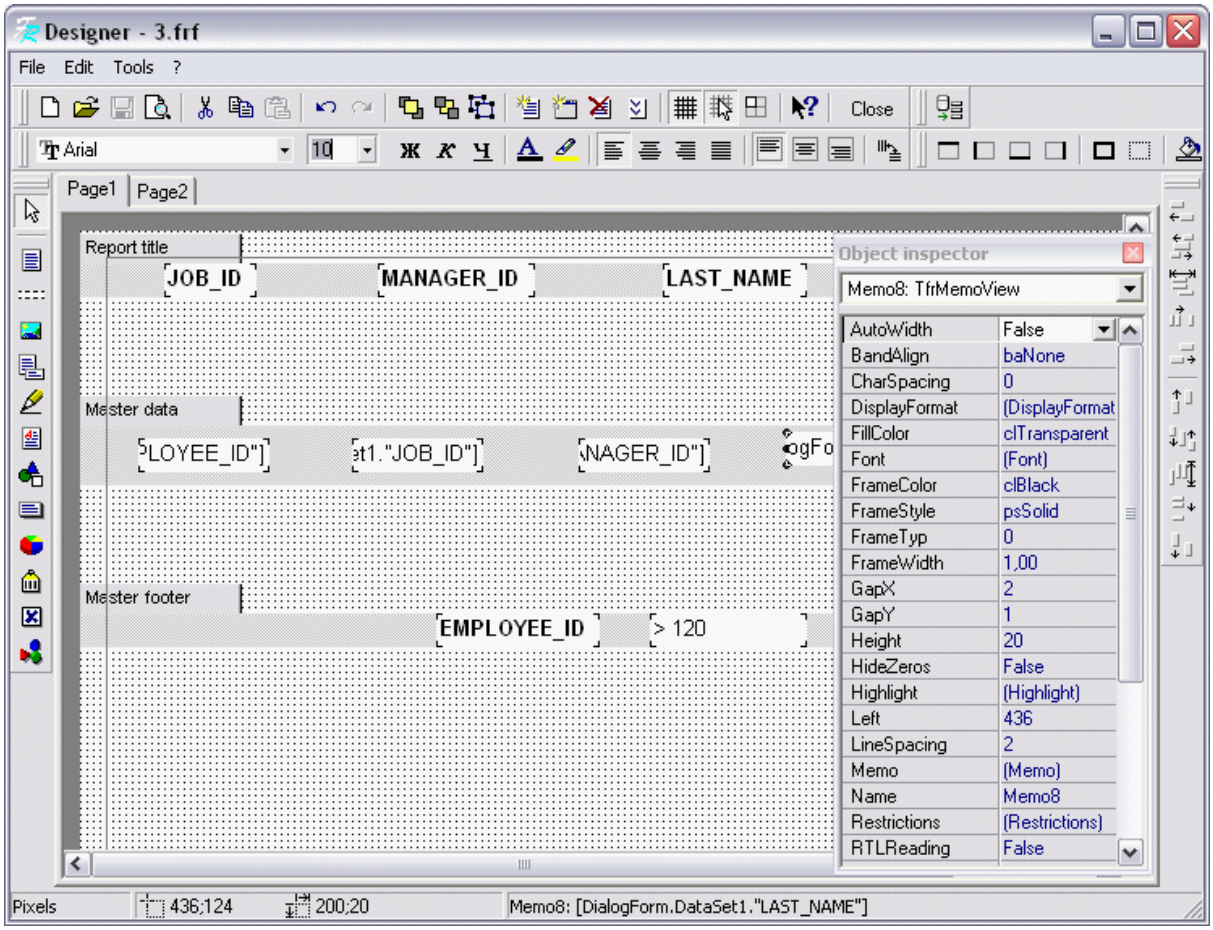
opened by pressing the **F11** key.

See also:

Create report wizard
Report Viewer



9.7.2.1 Adding dialog form

In the **Report Designer** right-click the page tab and select **Add Dialog Form** menu item. The Dialog Form will be created as shown below.

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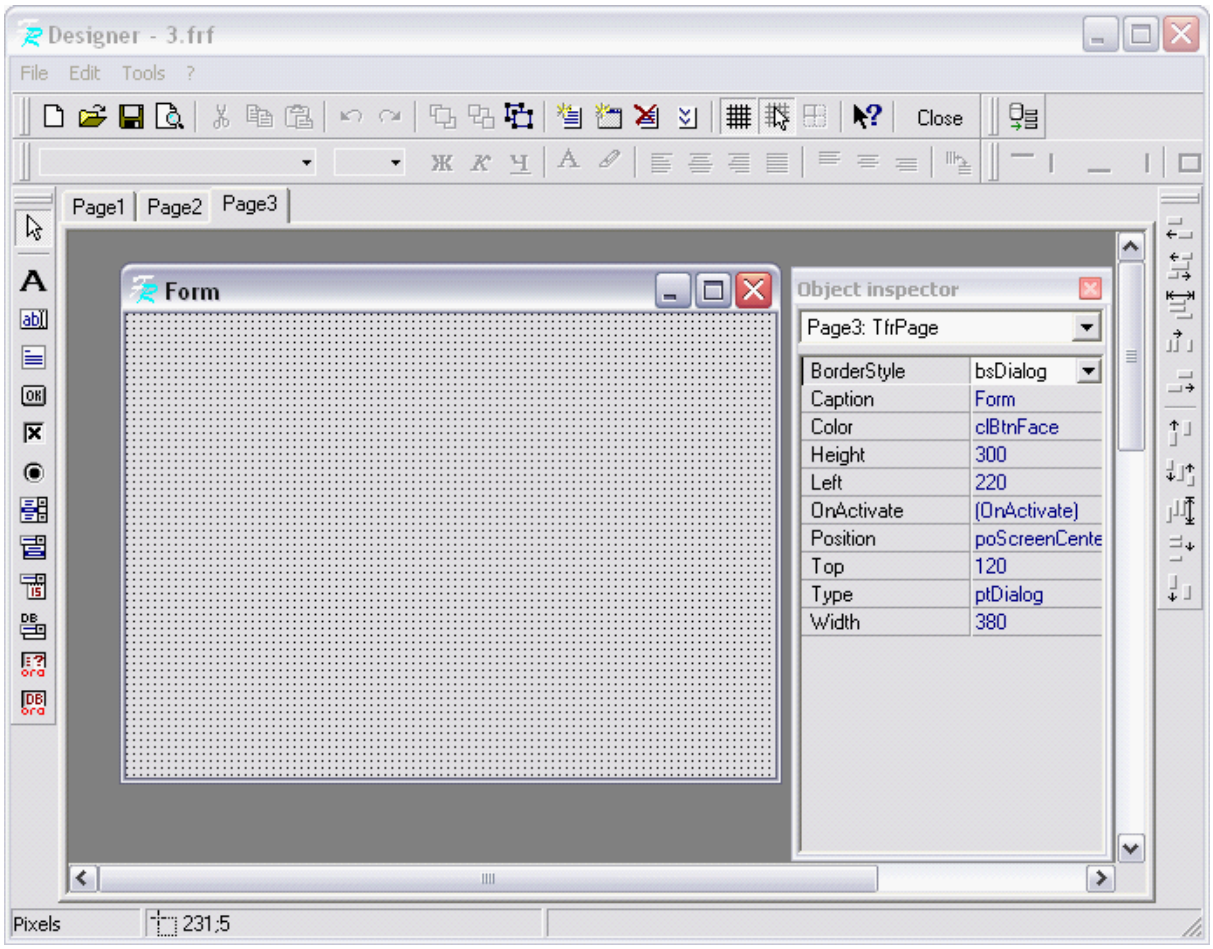

9.7.2.2 Adding database component

On the Dialog Form do the following:

- Pick the **Database** component (lower on the left toolbar) and drop it on the form.
- Within the **Object Inspector** enter the **HostName** and the **DatabaseName** properties manually, e.g. 'localhost' and 'mysql'.
- Set the **LoginPrompt** property to True.
- Set the **Connected** property to True.
- Enter your login and password (e.g 'root' and empty password).
- Set the **LoginPrompt** property to False.

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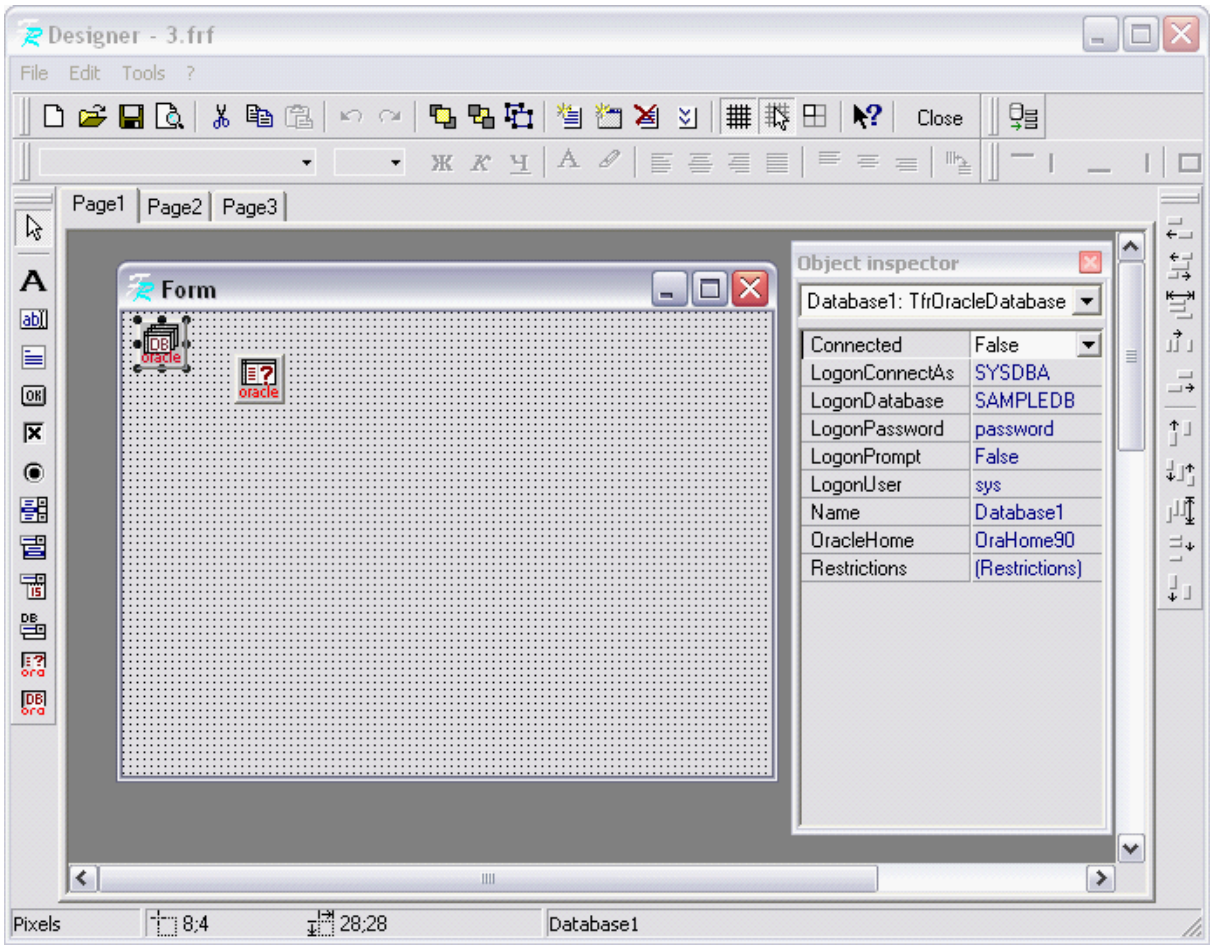

Note: The **Object Inspector** that allows you to edit report object properties, can be opened by pressing the **F11** key.

9.7.2.3 Adding query component

On the **Dialog Form** do the following:

- Pick the **Query** component on the left toolbar and drop it on the form.
- Select the name of your Database component in the dropdown list of the **Query1.Database** property.
- Set the **Query1.SQL** property value, e.g. 'SELECT * FROM user'.
- Set **Query1.Active** to True.

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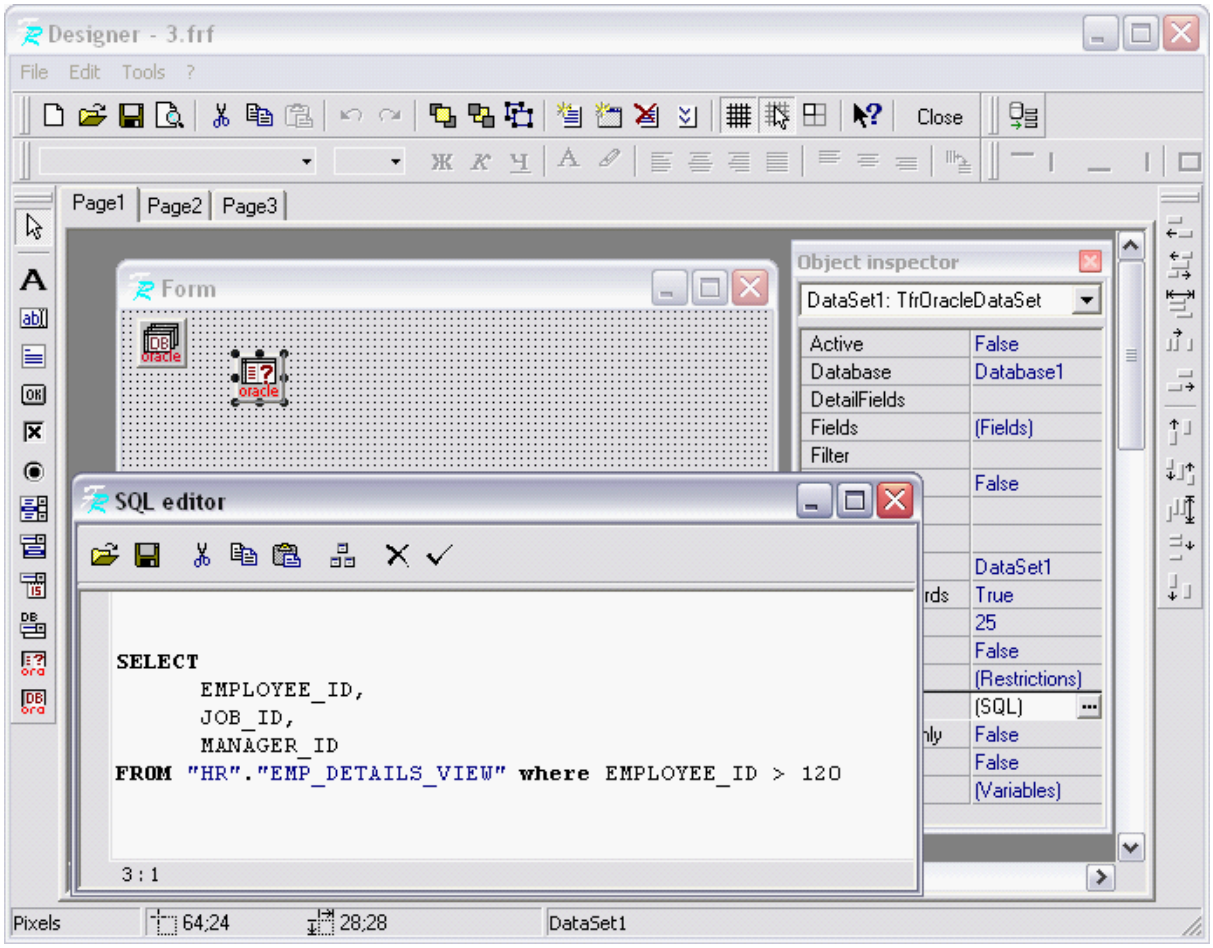

Note: The **Object Inspector** that allows you to edit report object properties, can be opened by pressing the **F11** key.

9.7.2.4 Specifying fields

At Page1 insert your fields into the report by clicking **Insert DB Fields** button on the top toolbar.

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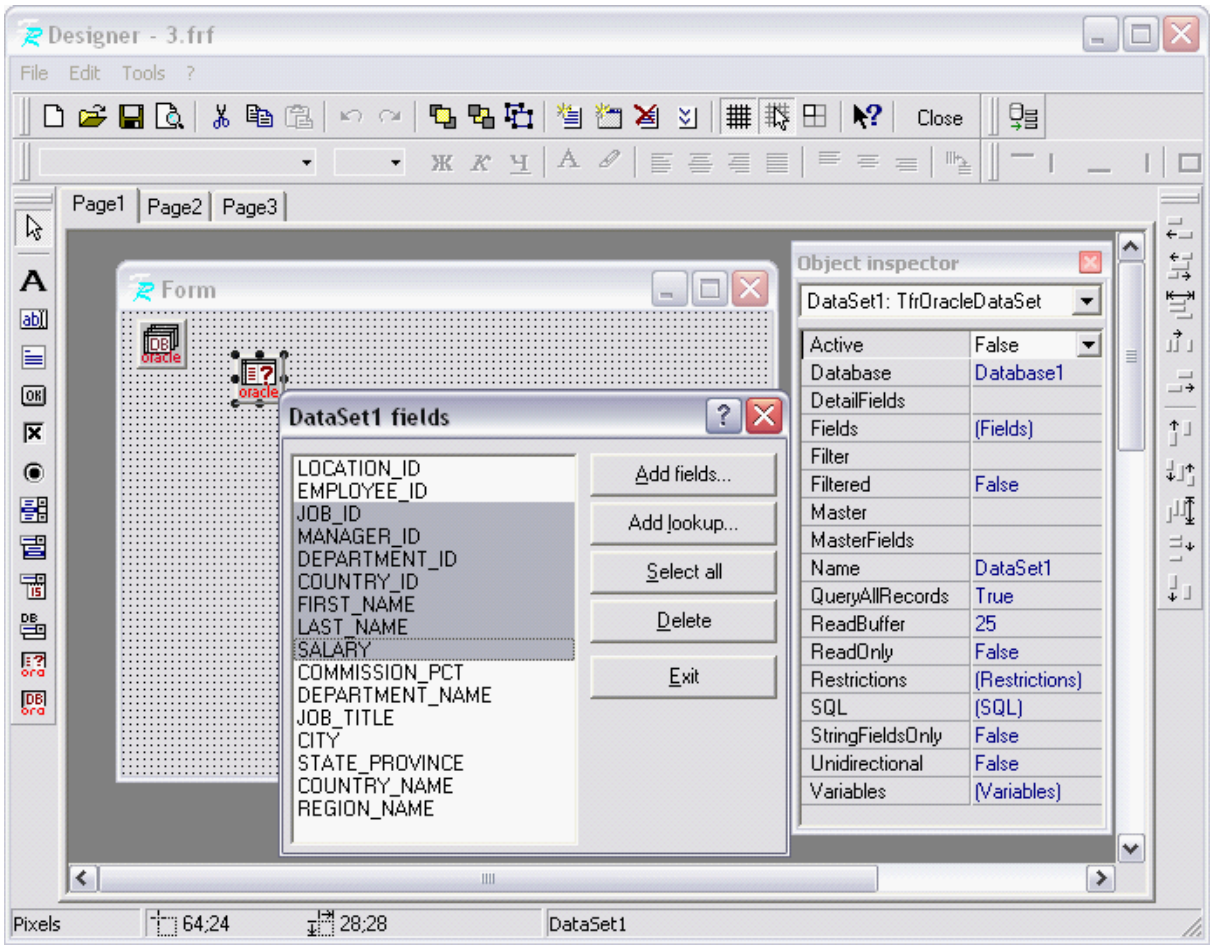

9.7.2.5 Viewing report

Click **Preview** button on the toolbar. This mode allows you to view and print the result report.

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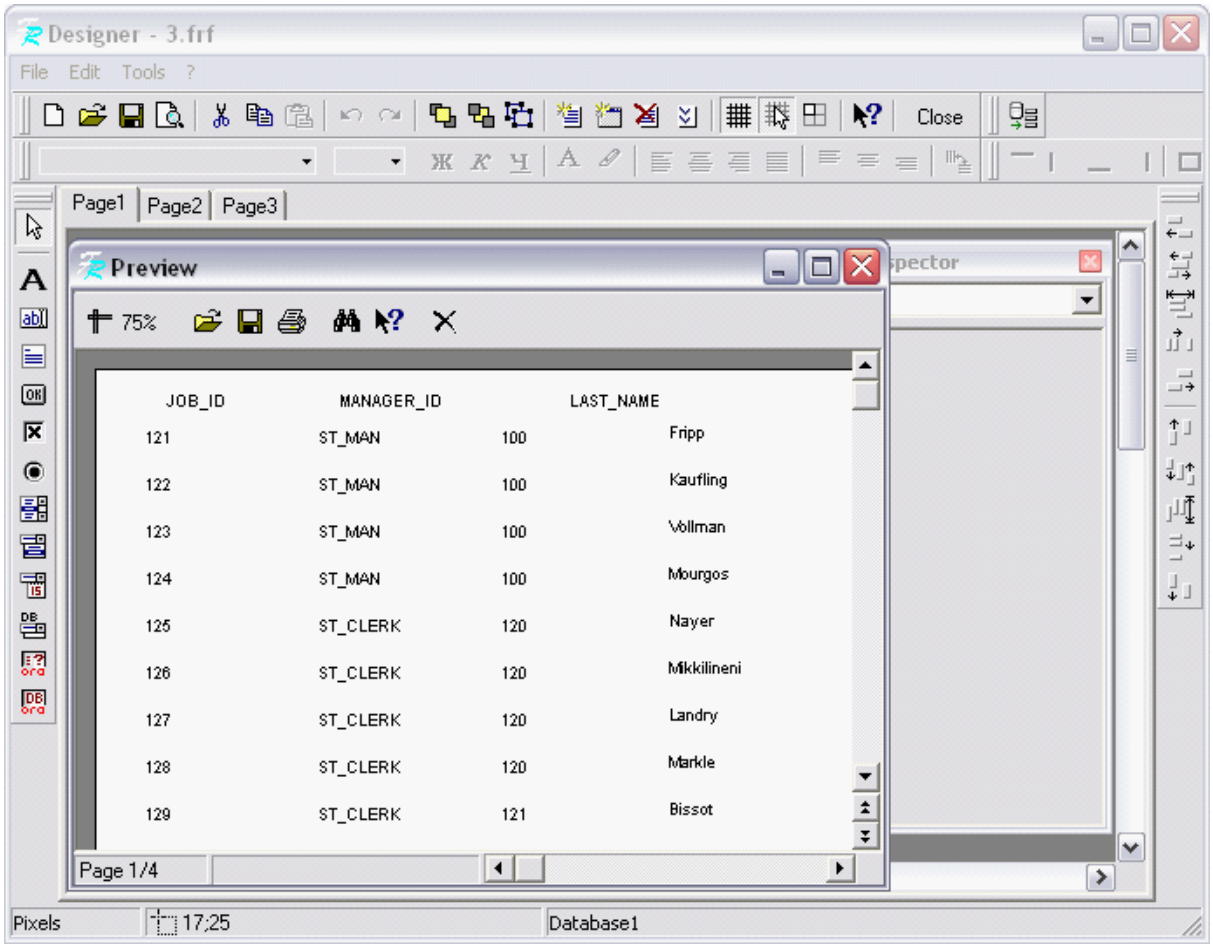

9.7.3 Report Viewer

Using the **Report Viewer** you can view, edit, save and print reports.
Main operations with the report can be found at Using navigation bar page.

See also:

Create report wizard
Report Designer

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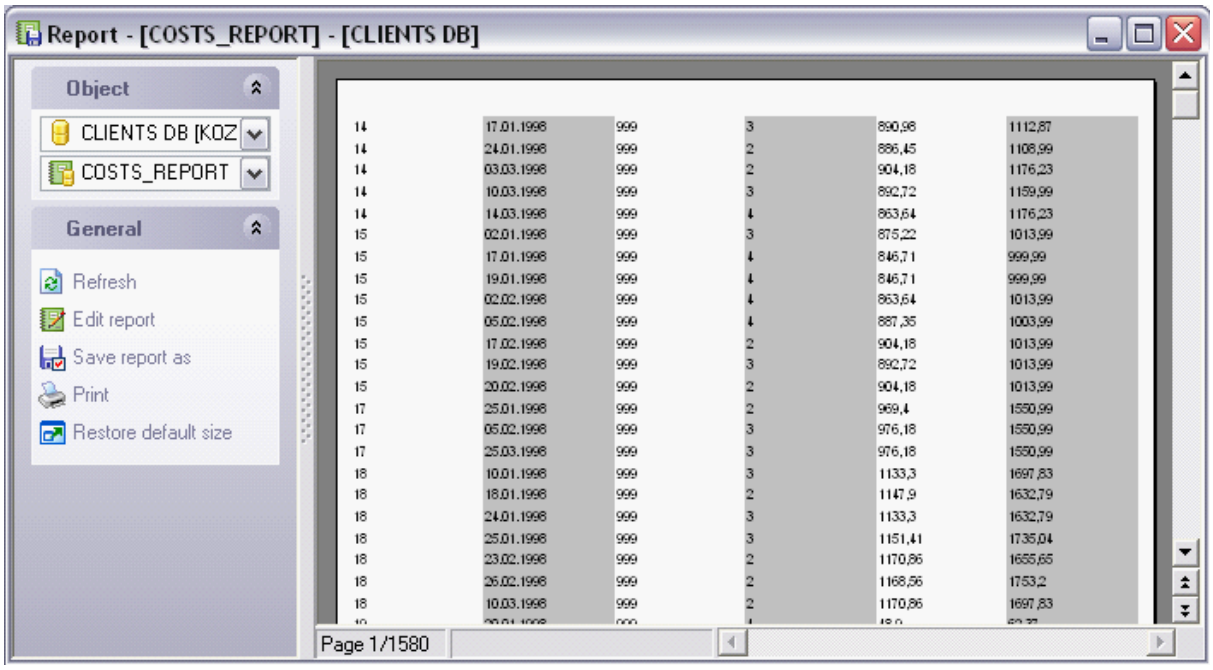
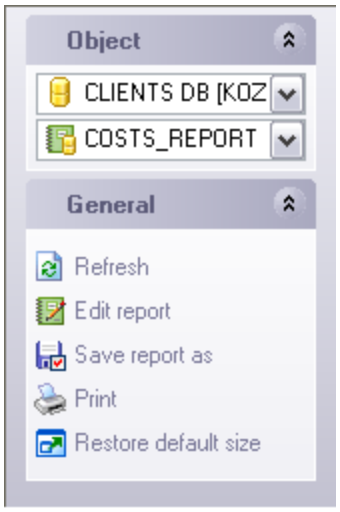


9.7.3.1 Using navigation bar

The **Navigation bar** on the left allows you to:

- Select a database and a report for viewing.
- Refresh the current report.
- Edit the current report with Report Designer.
- Save the report to a file.
- Print the current report.
- Bring the window to its default size.



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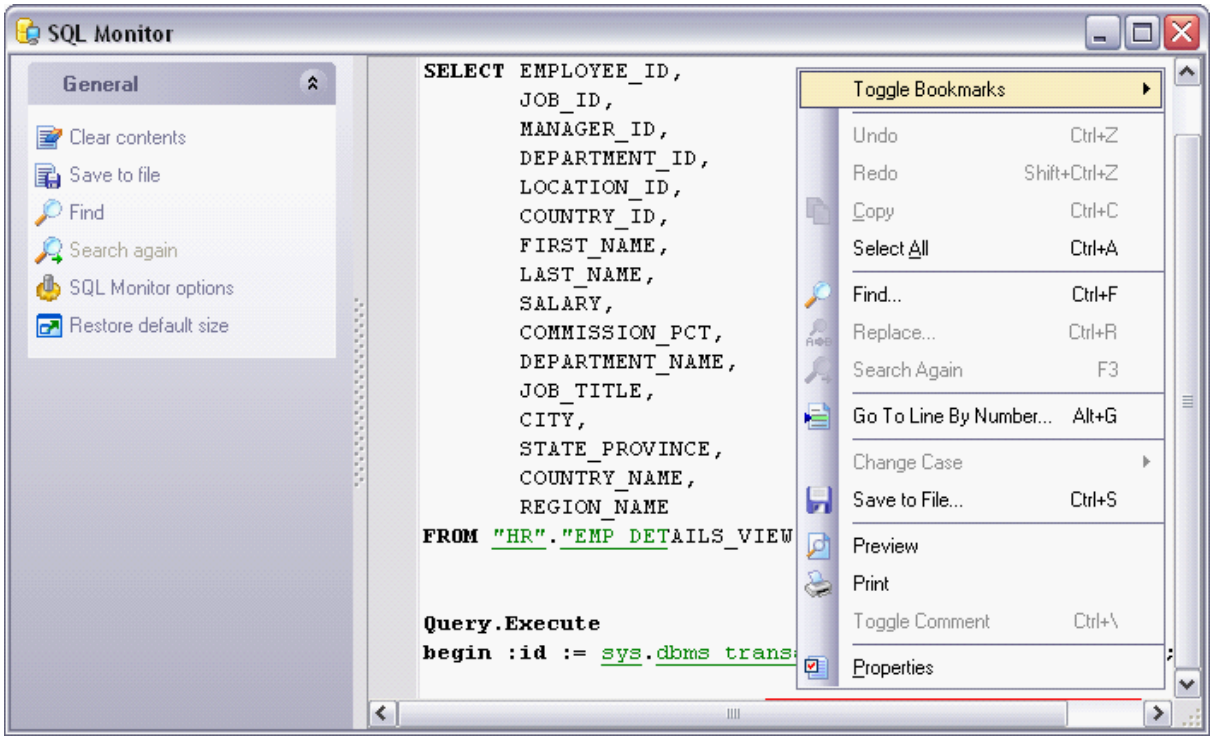
9.8 SQL Monitor

SQL Monitor allows you to view the SQL code of all the operations executed over databases and database objects in SQL Manager 2007 for Oracle. The content of the window can't be edited, but can be copied to the clipboard, saved to a text file or printed.

To open the **SQL Monitor** window, select **Tools | SQL Monitor** menu item.

- Using navigation bar
- Using popup menu



9.8.1 Using navigation bar

The **navigation bar** at the left allows you to:

- Clear the window contents.
- Save the content of the window to a text file.
- Search for a string through the logged SQL code
- Configure SQL Monitor in the Environment Options dialog.
- Bring the window to its default size.

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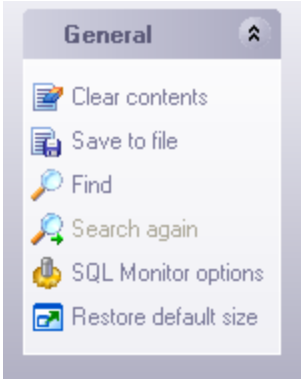
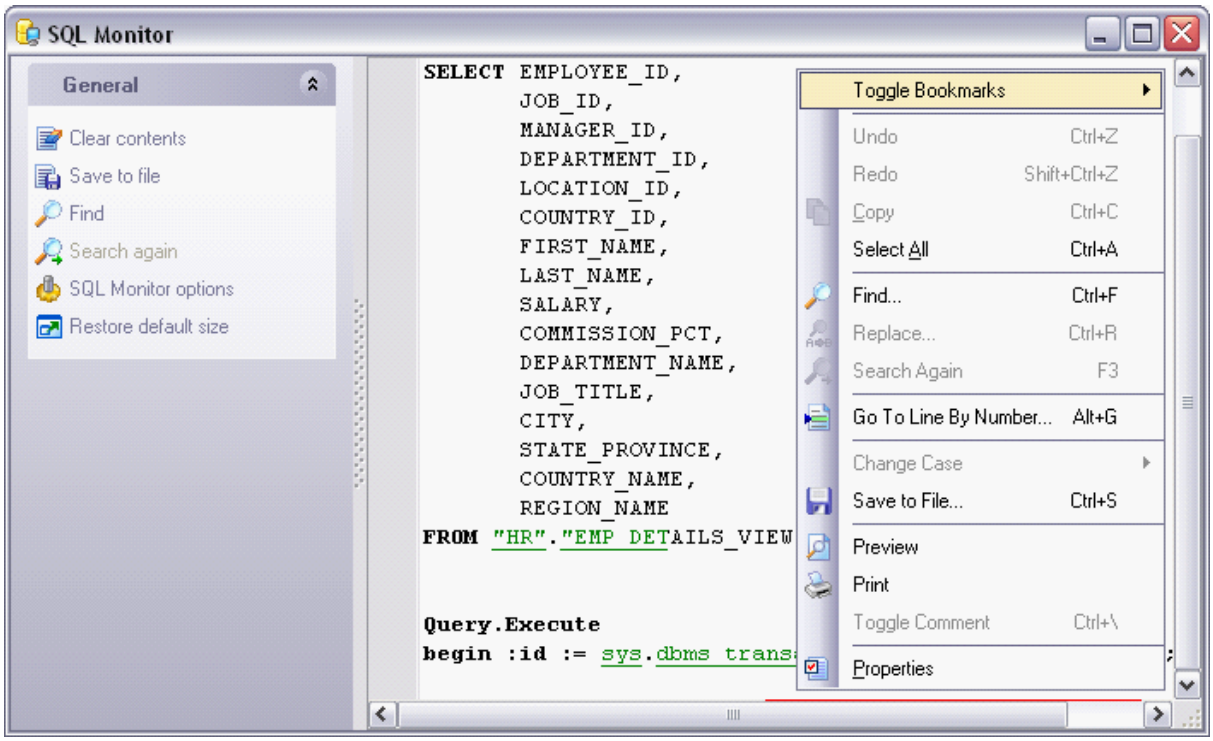


9.8.2 Using popup menu

The popup menu of **SQL Monitor** provides various functions for working with the window content.

You can use bookmarks for quick navigation within the text, copy, search, save text to file or print the content of the **SQL Monitor** window. The Properties menu item allows you to configure all the editors and viewers within the Editor Options dialog.



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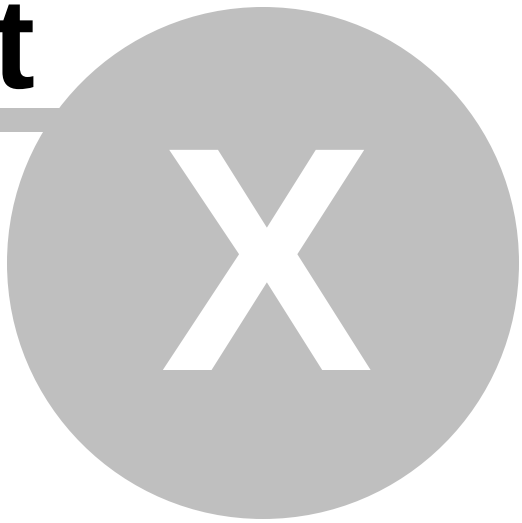
Part



10 Server Tools

SQL Manager 2007 for Oracle provides Grant Manager for managing grants roles and system privileges (including granting privileges on the selected databases, tables and fields).

Managing User Grants

To define user grants for database objects:

- Select the **Tools | Grant Manager** menu item.
- Select the database host from the drop-down list on Grant Manager toolbar.
- Edit database privileges within the **Grant Manager**.

Managing Jobs

To create/edit/suspend jobs please use Job Manager:

- Select the **Tools | Job Manager** menu item.
- Select the database from the drop-down list on Job Manager toolbar.
- Edit job within the **Job Editor**.

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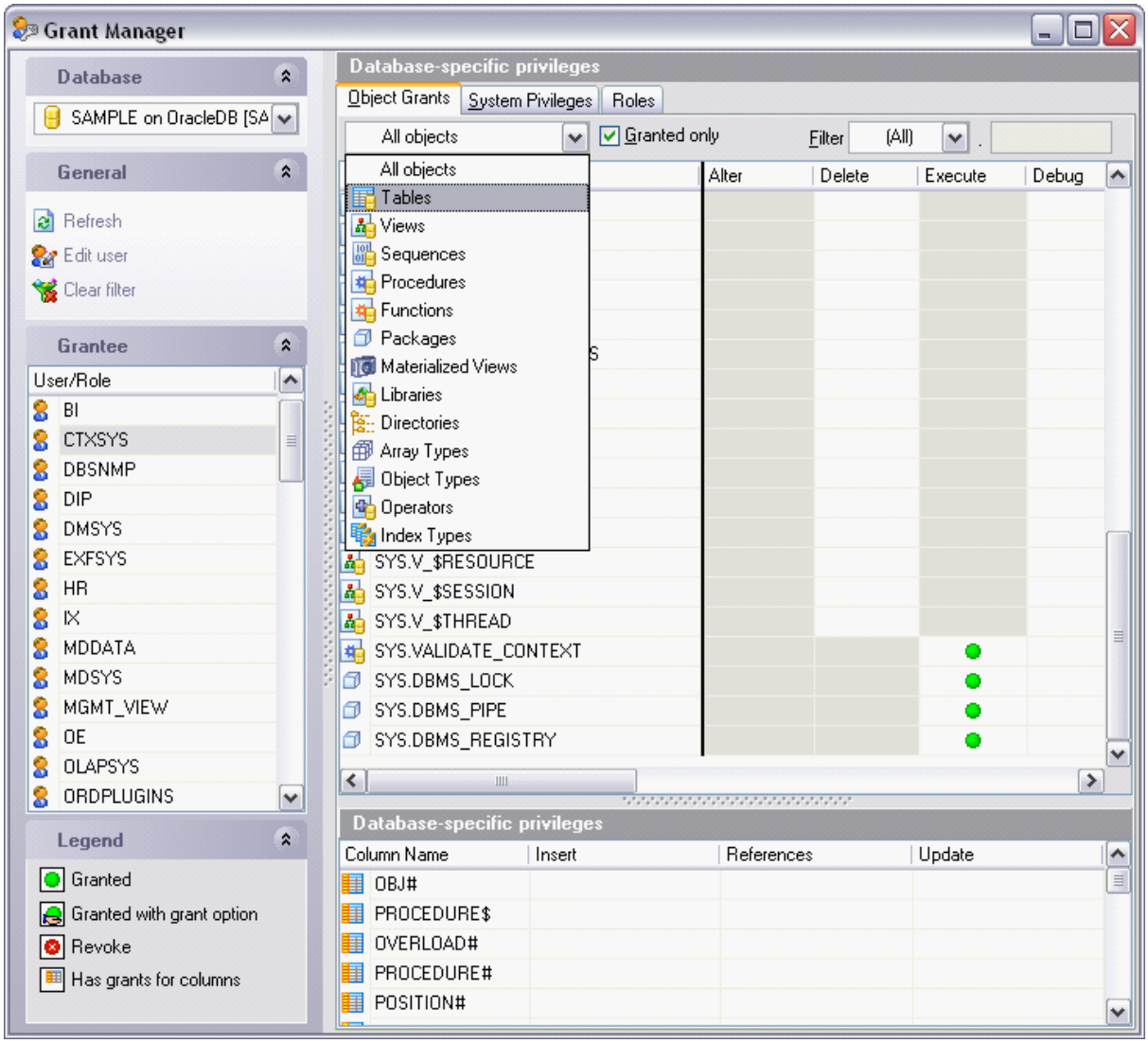
10.1 Grant Manager

Grant Manager allows you to set the user access grantee for certain databases and their objects.

To open **Grant Manager** select the **Tools | Grant Manager** menu item.

- Using navigation bar
- Managing objects grants
- Managing system privileges
- Managing Roles



10.1.1 Using navigation bar

The navigation bar on the left allows you to:

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Object bar:
- Select a database for editing within the current window.

General bar:
- Refresh the content of the active tab
- Edit existing user
- Clear the filter applied
- Bring the window to its default size

Grantee bar:
- Select a user/role for displaying their grants.

The next bar displays various actions according to the current page of **Grant Manager**.

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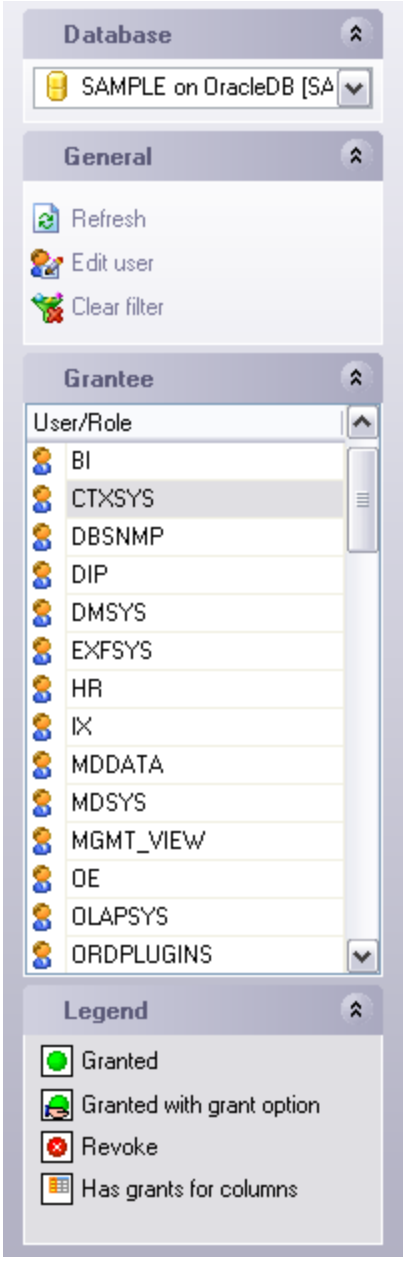

10.1.2 Managing objects grants

Object grants are managed at this tab.

The **Object Name** column contains a list of the objects on which the grants can be set; every subsequent column has the name of the permission which can be granted for the selected object (e.g. Alter, Insert, Update, etc.).

The list of the object displayed can be configured in several ways.

- Select a user/role at the Navigation bar to their grants.
- Check the **Granted only** option to display objects with at least one granted operation.
- Selecting a specific type of the object from the drop-down list right under the name of

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the **Object Grants** tab.
- Using the Filter to select a schema and specify filter for the object name.

You can use standard wildcards like *(asterix) or %(percent sign) which are the same, or ? (question mark). To exclude the object names set in the filter use ! (exclamation mark) at the begining. (e.g. the result for !T* is everything except the object names starting with T).

If any of these symbols presents in the name of the object and you do need to apply filter to them, just double that symnbol (e.g. the result for !!T* will be all objects which names begin with !T).

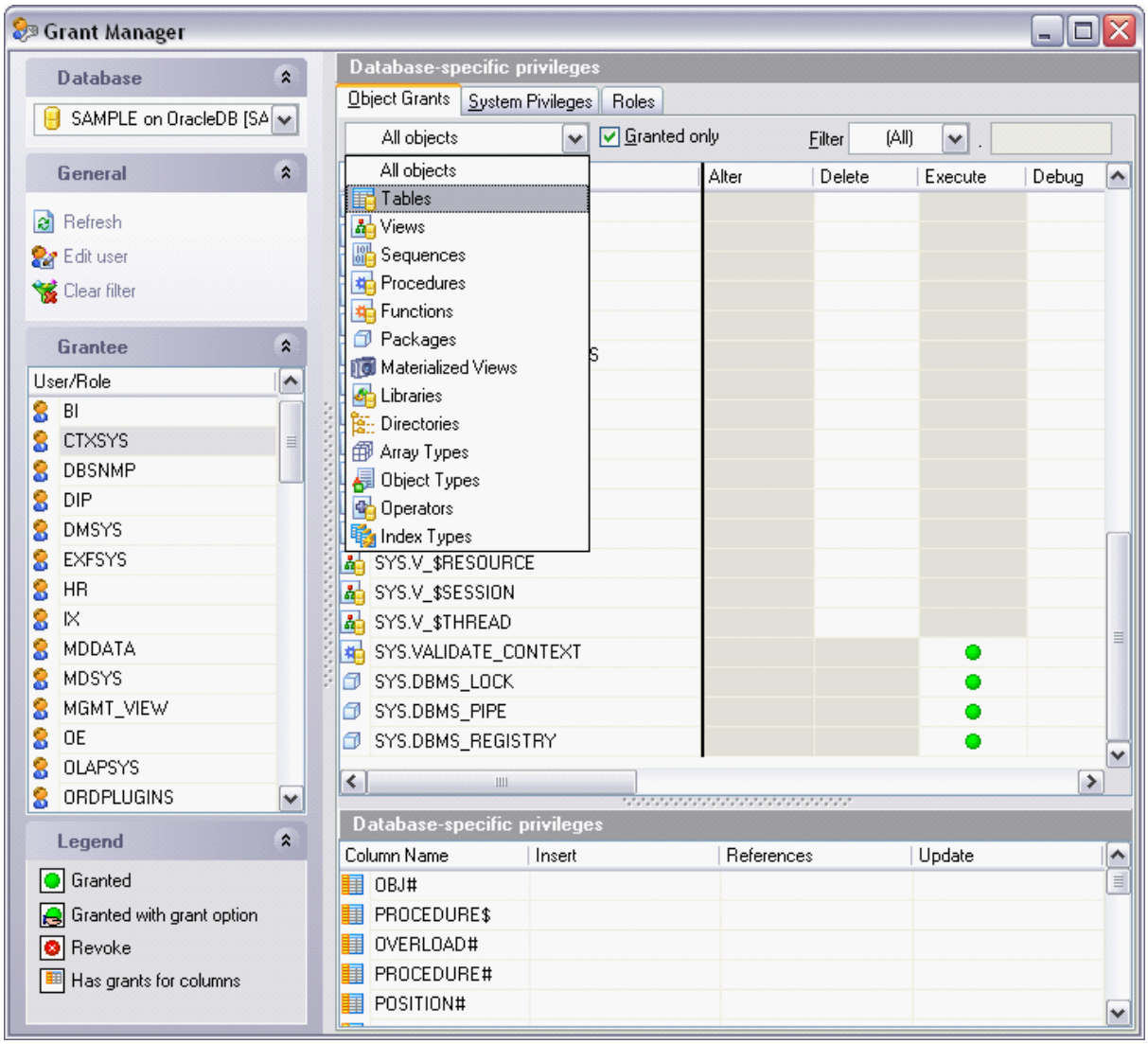
To grant a permission on an an object, find appropriate object in the Object Name list and a the column with corresponding permission. Note that the cells highlighted in grey are not available for setting grants due to the obvious reason (e.g. you cannot execute a table, alter a procedure, etc.).

There are 4 states available for every permission:
- Granted
- Granted with GRANT option
- Revoke
- Has grants for columns

Click on a cell to grant a specific permission for a certain object.

The panel at the bottom allows to view granted columns for the tables.

© 2007 EMS Database Management Solutions



10.1.3 Managing system privileges

To edit the specific privileges of a user to the database, select the database from the **Database** and the user from the **Grantee** list box at the navigation bar and the to which these privileges should be applied.

Right-click on a cell right to the desired system privilege then select the **Grant** item from the popup menu to grant the privilege to the selected user/role or select the **Revoke** item from the popup menu to forbid the selected privilege.

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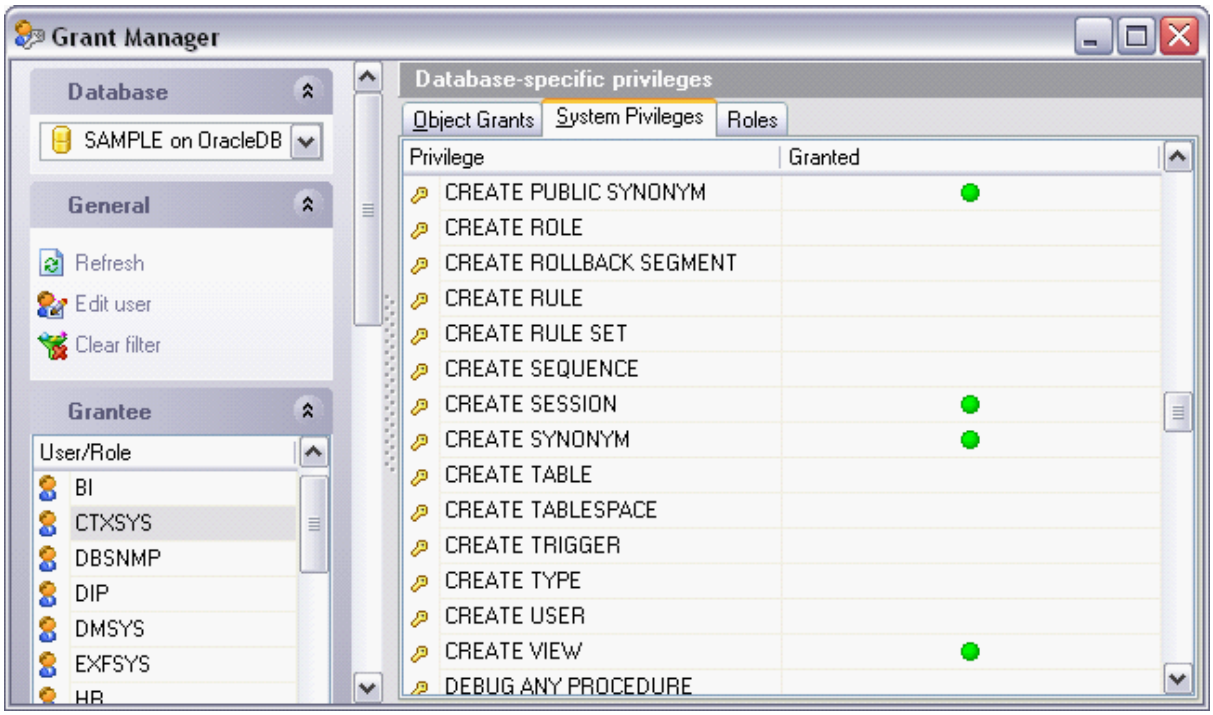

10.1.4 Managing Roles

On this tab you can define which users/roles may obtain specific roles and define whether a role should be assigned to a selected user by default.

Select a user/role at the navigation bar | Grantee and then select a role which current user/role may obtain and right-click on a cell right to the desired role. Select the **Grant** item from the popup menu to grant the role to the selected user/role or select the **Revoke** item from the popup menu to forbid the selected role.

To set current role as default for a selected user/role please use context menu of the cell.

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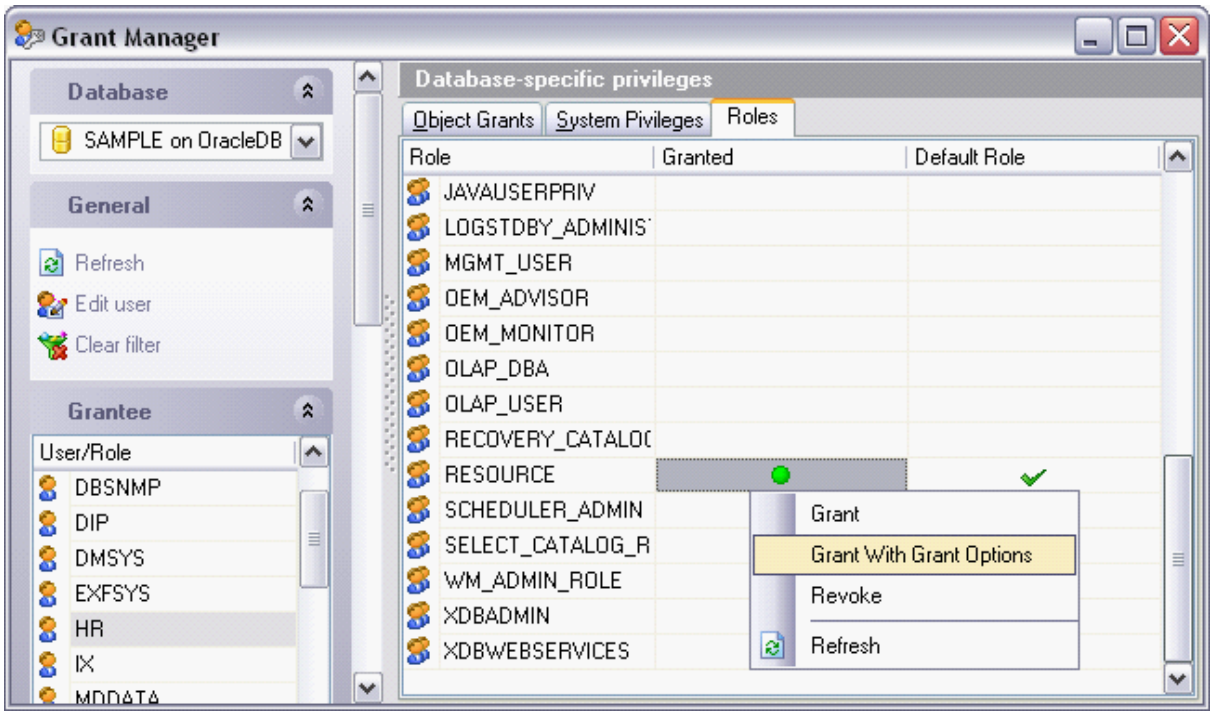

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10.2 Job Manager

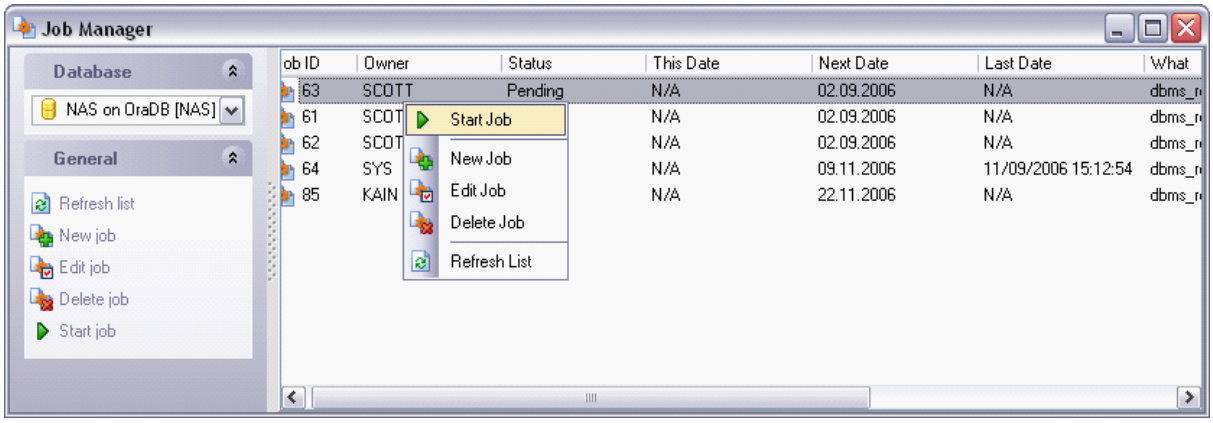
Job Manager allows you to create, schedule and run single or recurring execution of the tasks in database. Job (routine) is a stored procedure, PL/SQL anonymous block or external C/Java procedure. Jobs are executed in server processes in the background mode.

- Managing jobs
- Job Editor

The navigation bar on the left allows you to:

Servers bar:
- Select a server to operate with

General bar:
- Refresh the content of the active tab
- Add a new job
- Edit the current job
- Delete an existing job
- Start current job
- Bring the window to its default size



10.2.1 Managing jobs

Select corresponding items of the navigation bar or use the context menu of **Job Manager** to create/edit/delete and run a job.

To open a job in the **Job Editor** you can also double-click its name.

Note that current user can only run a job manually if he owns it.

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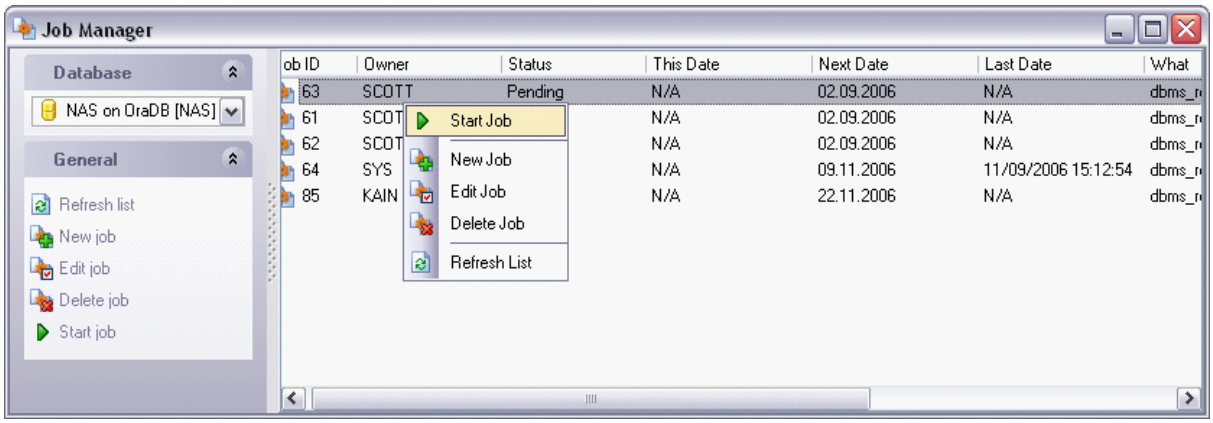

10.2.2 Job Editor

The **Job Editor** window opens automatically on attempt to create or edit a job.

The **General** tab

Job ID
Is set by server automatically.

Job owner
Name of the current user who creates the job.

Next Time
The next execution time for a specified job. Set execution date and time at the corresponding boxes.

Periodically
Set the interval between executions for a specified job. Use the **Every minute**, **Every hour**, **Every day** and **Custom interval** fields for defining a recurrence period.

Broken
Disables job execution. Oracle does not attempt to run broken jobs. However, you can force a broken job to run.

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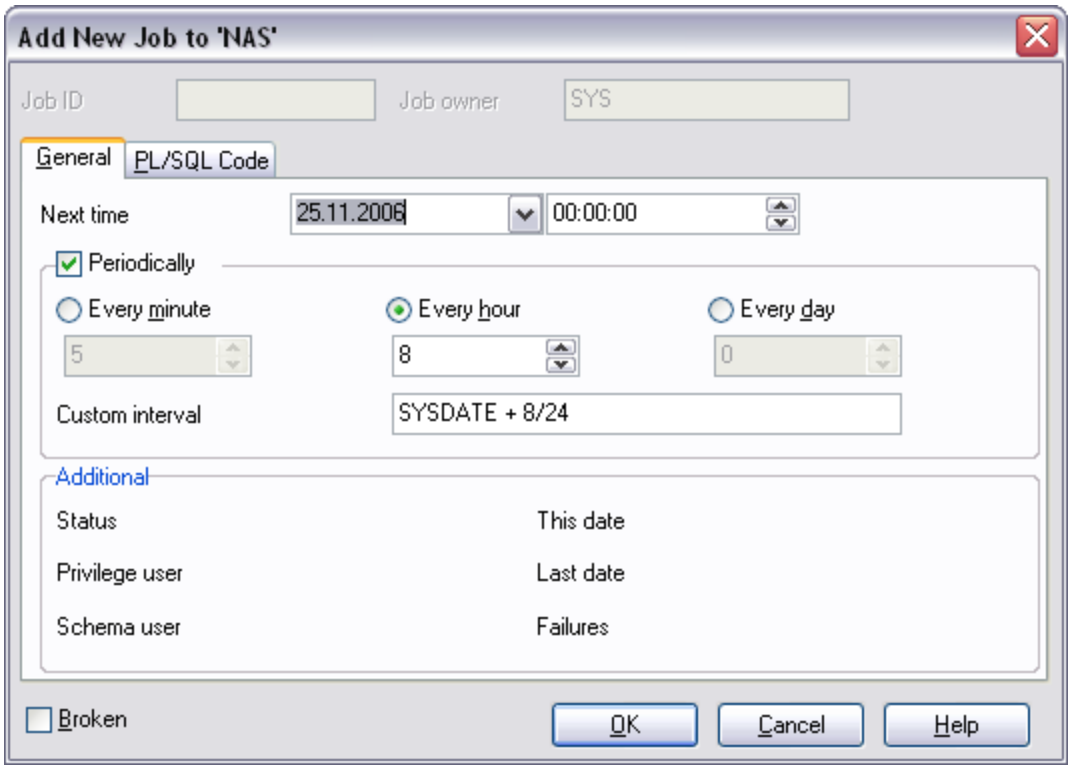

The **PL/SQL Code** tab

Define the **Object type**: a stored procedure or package containing external C/Java procedures.

Select the schema that contains a package/procedure. Then in the **Routine** filed select a desired procedure.

You can also create a PL/SQL anonymous block directly at the **What** editor.

Parse
If the option is enabled, then Oracle parses the procedure associated with the job.

When finished, press **OK** to compile SQL script that creates a job.

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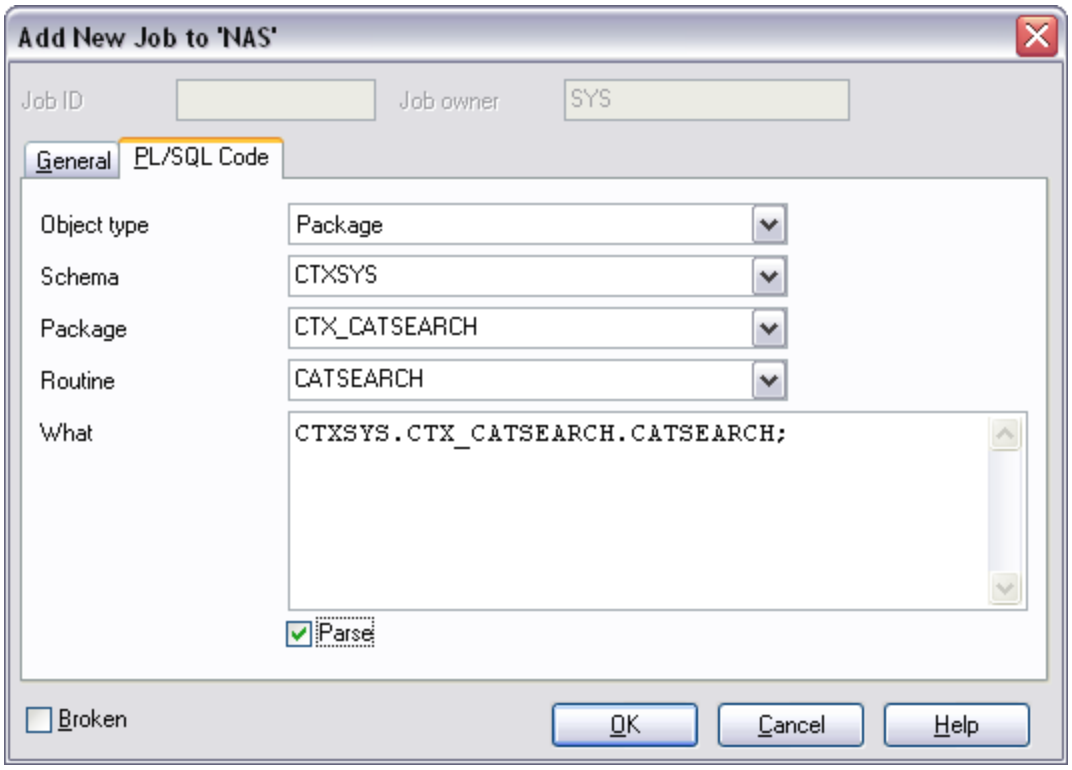

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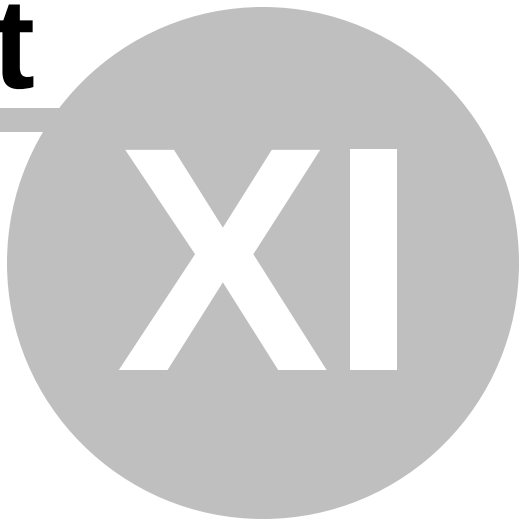
Part



11 Services

SQL Manager 2007 for Oracle provides graphical wizard interface for many native Oracle services, which are intended for database and table maintenance. To make your work with the server easier SQL Manager 2007 for Oracle also provides some graphical tools for working with the server as a whole.

The following services and server tools are available:

Truncate Wizard
The **Truncate Wizard** allows you to truncate tables and clusters in the selected database.

Advanced Statistics Expert Wizard
The **Advanced Statistics Expert** wizard allows you to collect various statistics as an aid to improve the performance.

Recompile Invalid Objects Wizard
The **Recompile Invalid Objects** service allows you look up for inavlid object in selected schema and recompile its definition.

Enable/Disable Constraints Wizard
The **Enable/Disable Constraints** wizard allows you to enable and disable constraints; it finds the them and converts them using Oracle statements.

Backup Database
The **Backup Database** wizard is intended for creating backups of your Oracle database.

Restore Database
The **Restore Database** wizard is intended for restoring your Oracle database from backups.

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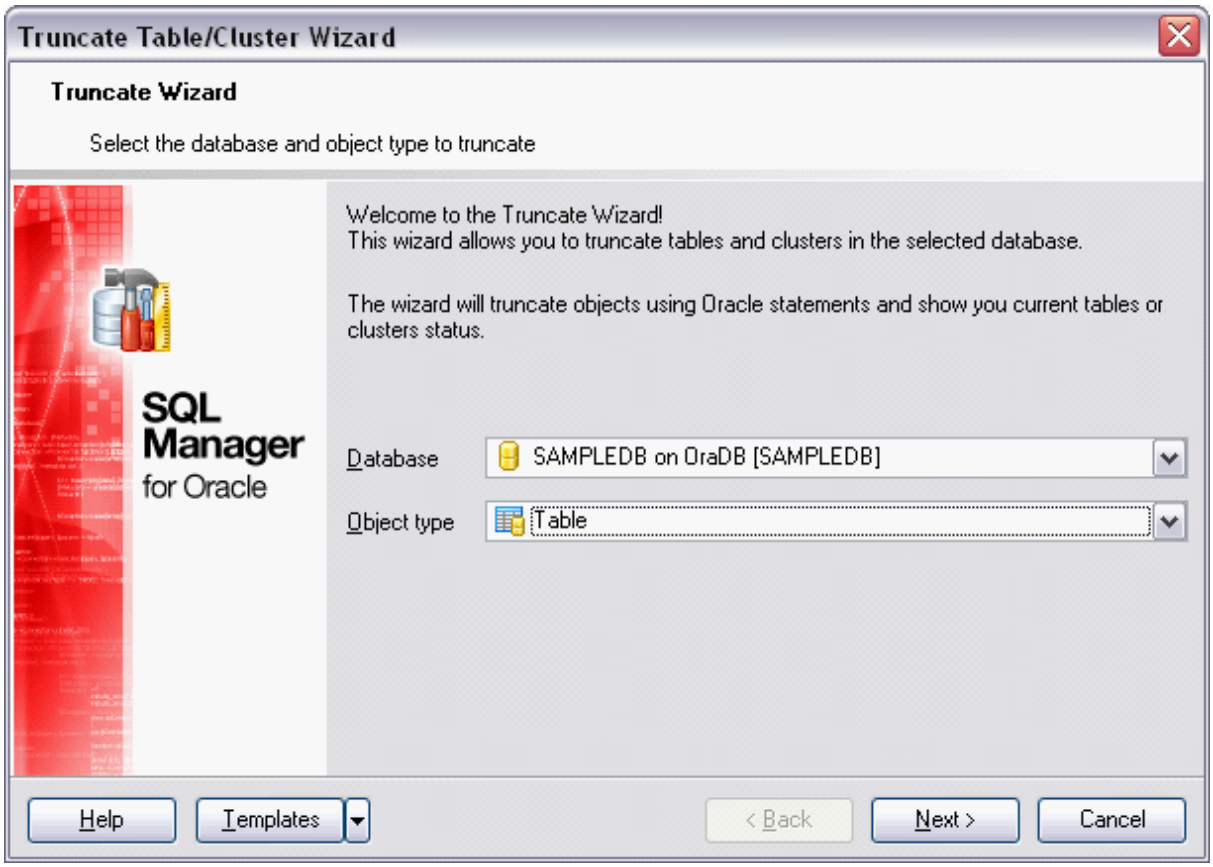
11.1 Truncate

The **Truncate** Wizard allows you to truncate tables and clusters in the selected database.

To start the wizard please select the **Services | Truncate** menu item.


Truncate Table/Cluster Wizard
Truncate Wizard
Select the database and object type to truncate
Welcome to the Truncate Wizard!
This wizard allows you to truncate tables and clusters in the selected database.
The wizard will truncate objects using Oracle statements and show you current tables or clusters status.
SQL Manager for Oracle
Database
SAMPLEDB on OraDB [SAMPLEDB]
Object type
Table
Help
Templates
< Back
Next >
Cancel

See also:

Services

11.1.1 Selecting objects to truncate

At the first step please select target database from the list and desired object type (table/cluster).

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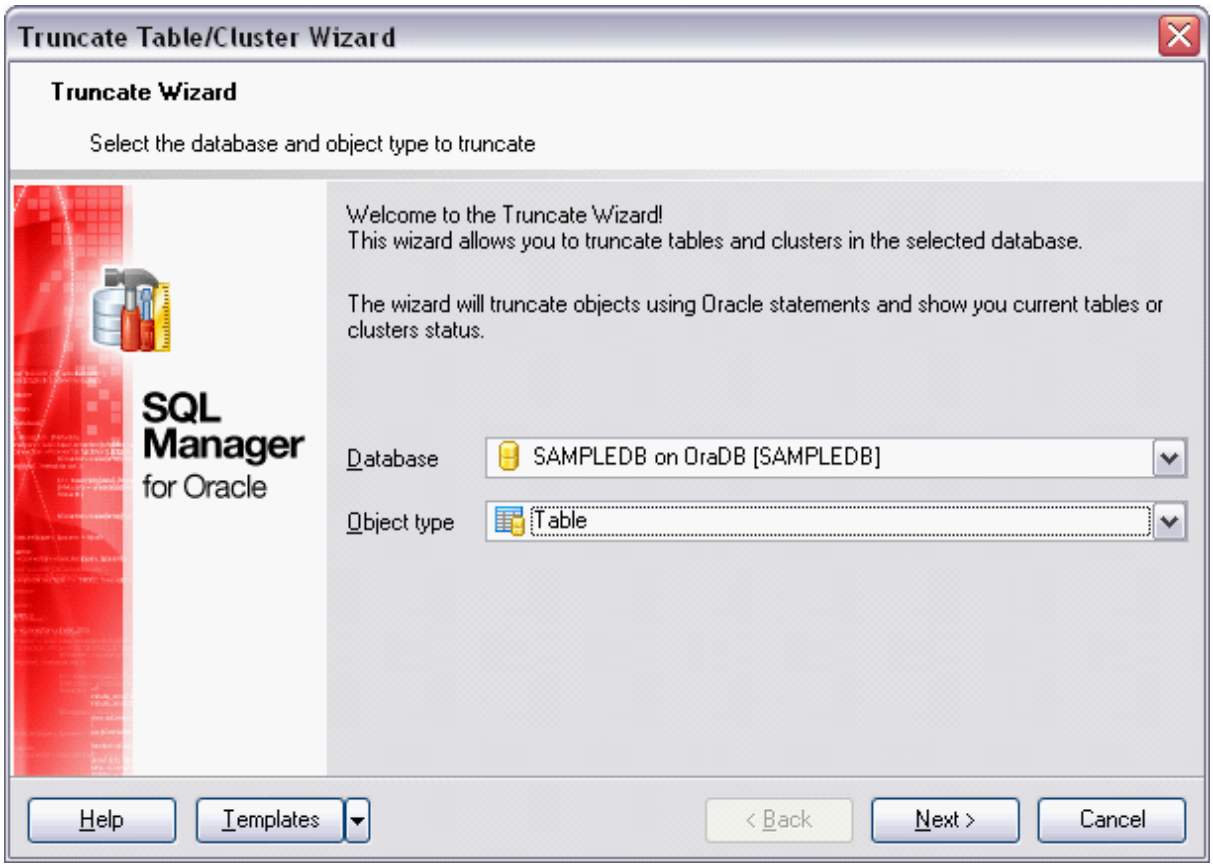
Truncate Table/Cluster Wizard
Truncate Wizard
Select the database and object type to truncate
Welcome to the Truncate Wizard!
This wizard allows you to truncate tables and clusters in the selected database.
The wizard will truncate objects using Oracle statements and show you current tables or clusters status.
SQL Manager for Oracle
Database
SAMPLEDB on OraDB [SAMPLEDB]
Object type
Table
Help
Templates
< Back
Next >
Cancel

Having selected the database you need to choose the schema which contains tables/ clusters to be processed.

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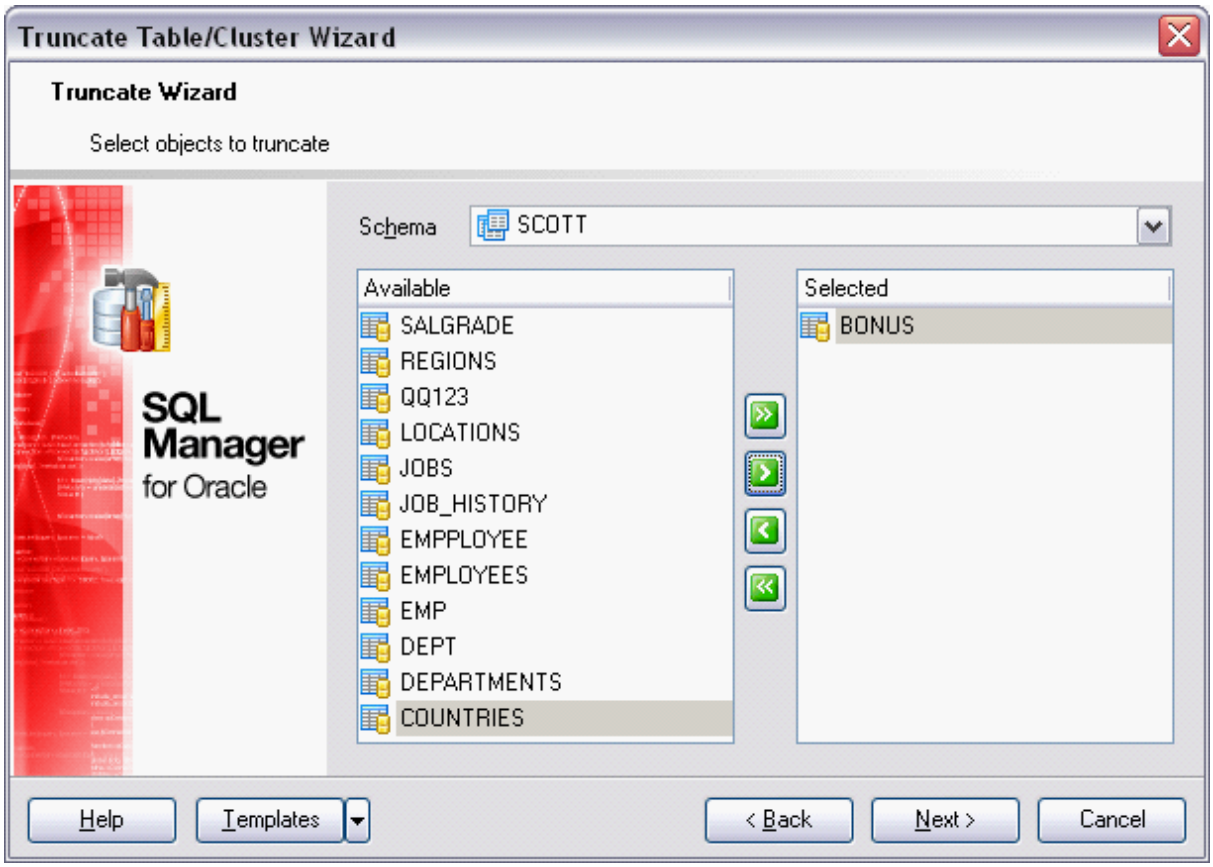

To include objects to the list, move them from the **Available** list to the **Selected** by double-clicking or dragging their names. To remove the objects from the list, move them back in the same way. You can also use the arrow buttons to move the selected objects (multiple selection can be performed using Ctrl or Shift).

11.1.2 Setting truncate options

Materialized view log options
Please specify whether a materialized view log defined on the table is to be preserved or purged when the table is truncated.

Storage
Specify **Drop** to deallocate all space from the deleted rows from the table or cluster except the space allocated by the MINEXTENTS parameter of the table or cluster. This space can subsequently be used by other objects in the tablespace.

By specifying **Reuse** the space from the deleted rows allocated to the table or cluster will be retained. Storage values are not reset to the values when the table or cluster was created. This space can subsequently be used only by new data in the table or cluster resulting from insert or update operations.

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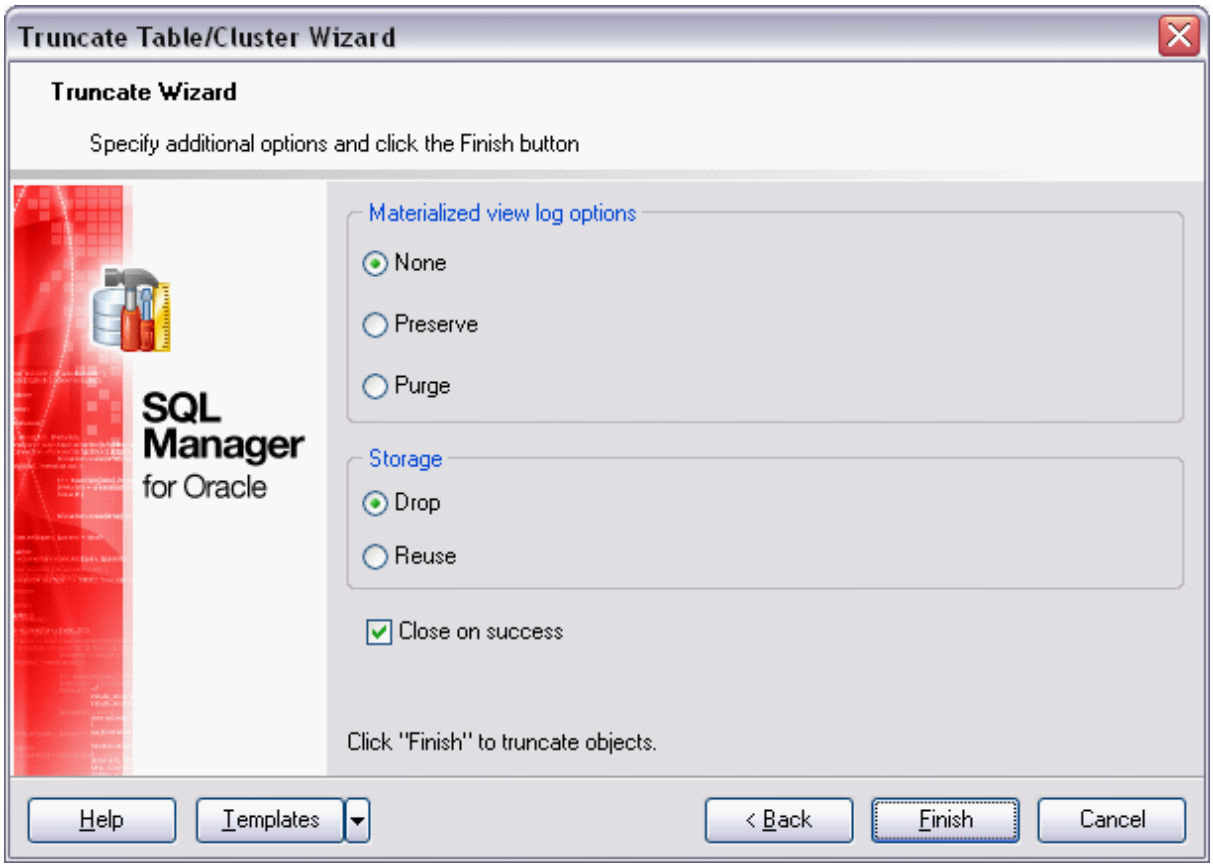

Press **Finish** to start the process.

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11.2 Advanced Stats Expert

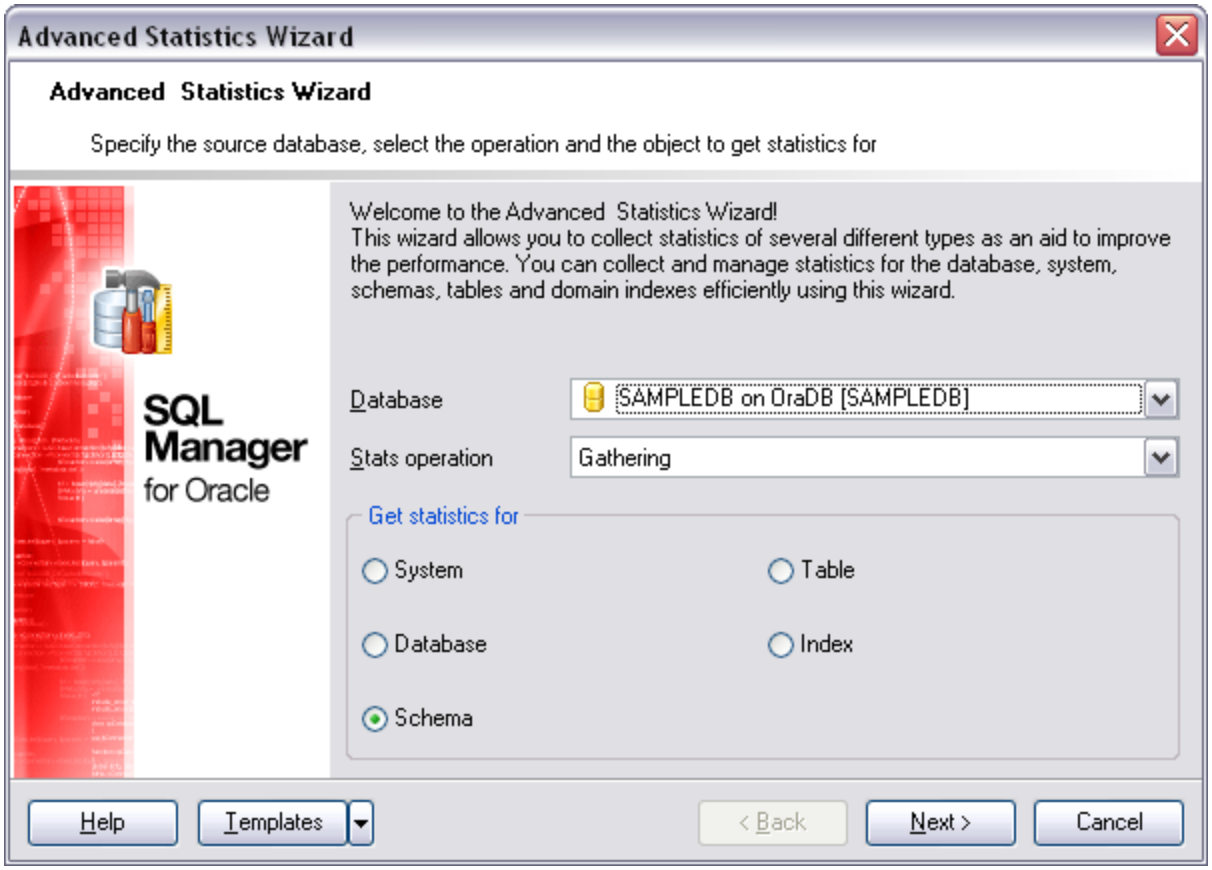
The **Advanced Statistics Expert** wizard allows you to collect various statistics as an aid to improve the performance. You can choose to collect and manage statistics for whole system or database, schemas, tables and domain indexes.

To start the wizard please select the **Services | Advanced Statistics Expert** menu item.

See also:
Services

11.2.1 Selecting object and stats type

At the first step please select target database from the list.


Advanced Statistics Wizard
Advanced Statistics Wizard
Specify the source database, select the operation and the object to get statistics for
Welcome to the Advanced Statistics Wizard!
This wizard allows you to collect statistics of several different types as an aid to improve the performance. You can collect and manage statistics for the database, system, schemas, tables and domain indexes efficiently using this wizard.
SQL Manager for Oracle
Database
SAMPLEDB on OraDB [SAMPLEDB]
Stats operation
Gathering
Get statistics for
System
Table
Database
Index
Schema
Help
Templates
< Back
Next >
Cancel

Having selected the database you need to choose the schema which contains the desired table.

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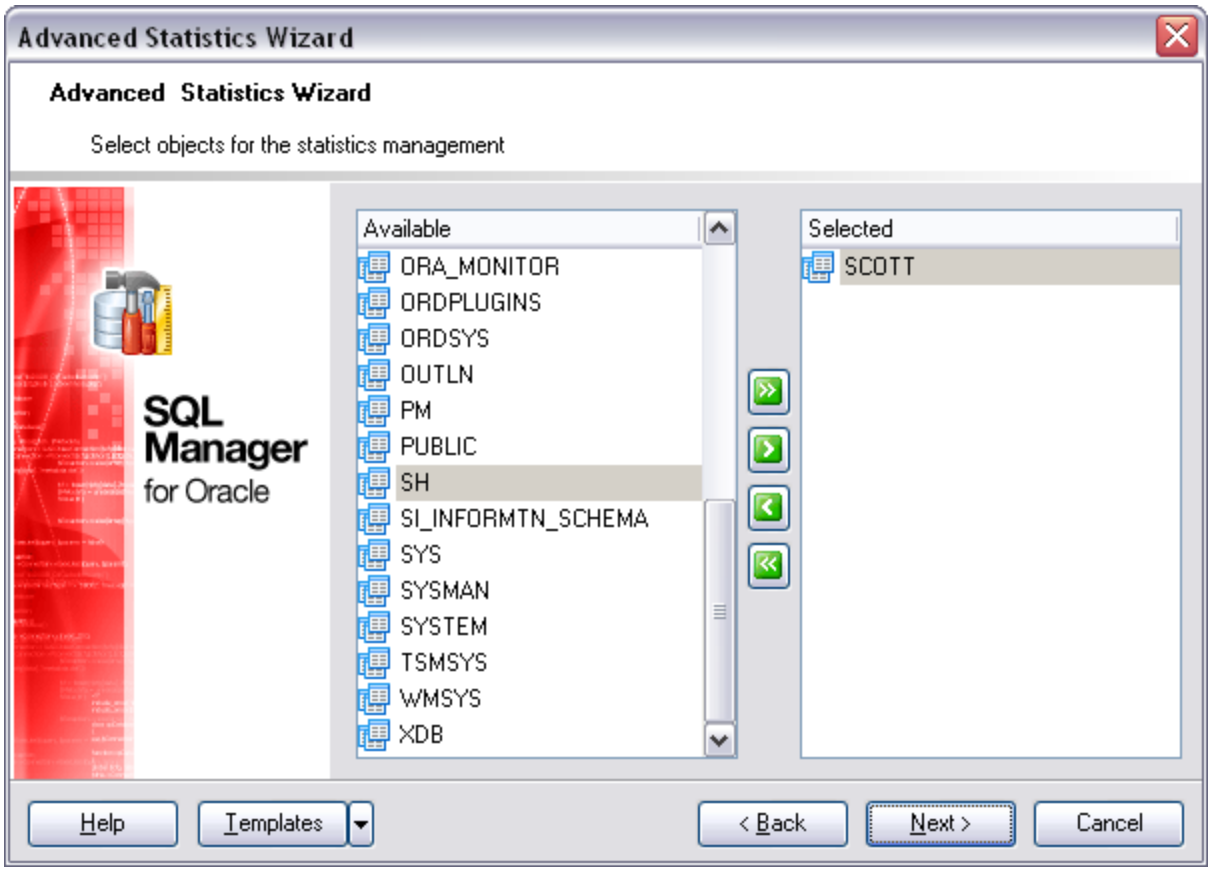

To include th objects to the list, move them from the **Available** list to the **Selected** by double-clicking or dragging their names. To remove the objects from the list, move them back in the same way. You can also use the arrow buttons to move the selected objects (multiple selection can be performed using Ctrl or Shift).

11.2.2 Setting statistics options

Specify additional settings for **Advanced Statistics Expert**.

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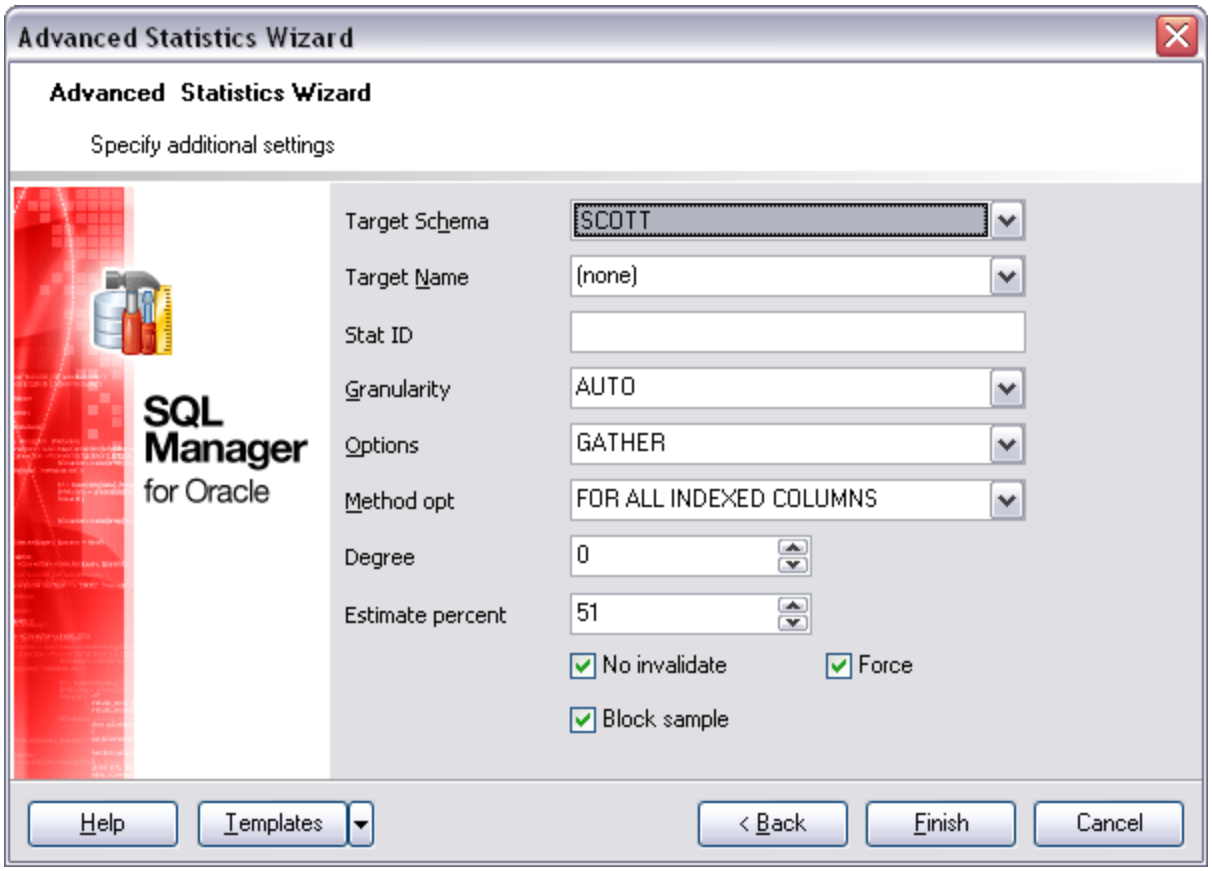

Target Schema
Schema containing stat table

Target Name
User stat table identifier describing where to save the current statistics.

Stat ID
Identifier (optional) to associate with these statistics within stat table

Granularity
Granularity of statistics to collect (only pertinent if the table is partitioned).

- DEFAULT: Gather global- and partition-level statistics.
- SUBPARTITION: Gather subpartition-level statistics.
- PARTITION: Gather partition-level statistics.
- GLOBAL: Gather global statistics.
- ALL: Gather all (subpartition, partition, and global) statistics.

Options
Further specification of which objects to gather statistics for:

- GATHER: Gathers statistics on all objects in the schema.
- GATHER AUTO: Gathers all necessary statistics automatically. Oracle implicitly determines which objects need new statistics, and determines how to gather those statistics.
- GATHER STALE: Gathers statistics on stale objects as determined by looking at the *_tab_modifications views. Also, return a list of objects found to be stale.

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- GATHER EMPTY: Gathers statistics on objects which currently have no statistics. also, return a list of objects found to have no statistics.
- LIST AUTO: Returns a list of objects to be processed with GATHER AUTO.
- LIST STALE: Returns list of stale objects as determined by looking at the *_tab_modifications views.
- LIST EMPTY: Returns list of objects which currently have no statistics.

Method opt
Specify the method of gathering stats - for all indexed/hidden columns.

Degree
Degree of parallelism.

Estimate percent
Percentage of rows to estimate.

Block sample
Whether or not to use random block sampling instead of random row sampling. Random block sampling is more efficient, but if the data is not randomly distributed on disk, then the sample values may be somewhat correlated.

Force
When checked, deletes column statistics even if locked.

No invalidate
Does not invalidate the dependent cursors if checked.

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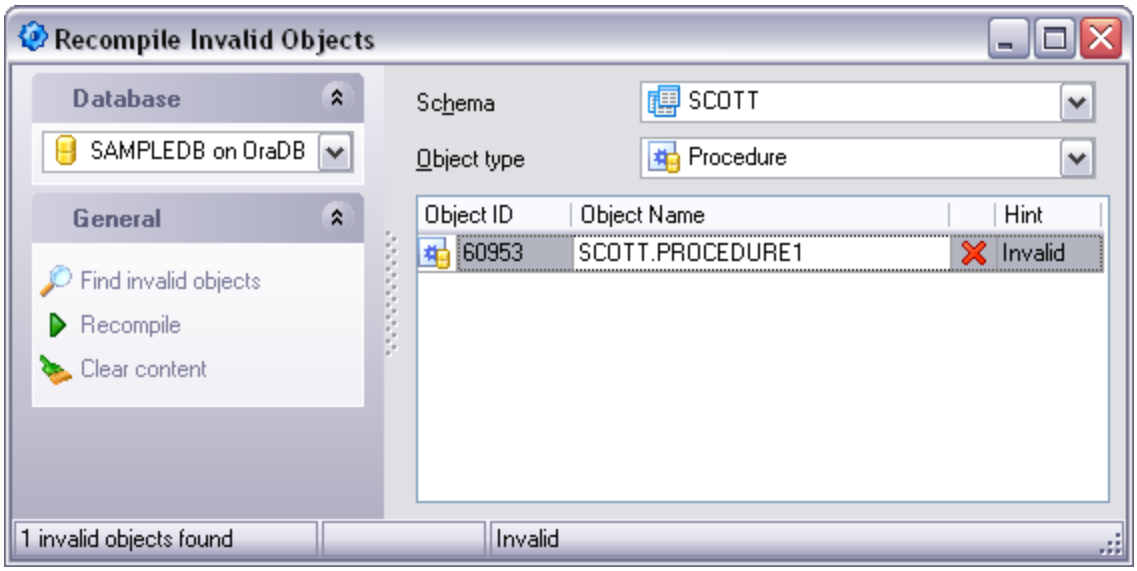
11.3 Recompile invalid objects

The **Recompile Invalid Objects** service allows you look up for inavlid object in selected schema and recompile its definition.

To start the service please select the **Services | Recompile Invalid Objects** menu item.



See also:
Services

11.3.1 Using navigation bar

The navigation bar on the left allows you to:

Object bar:
- Select a database for editing within the current window.

General bar:
- Look for invalid objects
- Recompile selected objects
- Clear the content of current window

The next bar displays various actions according to the current page of **Recompile invalid objects** service.

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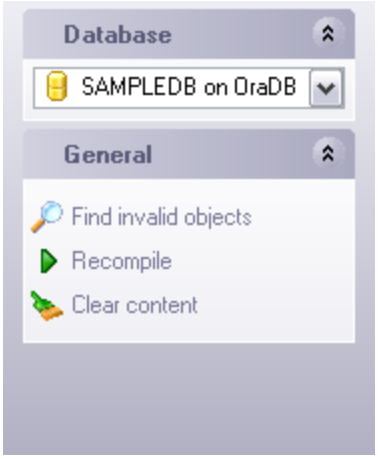
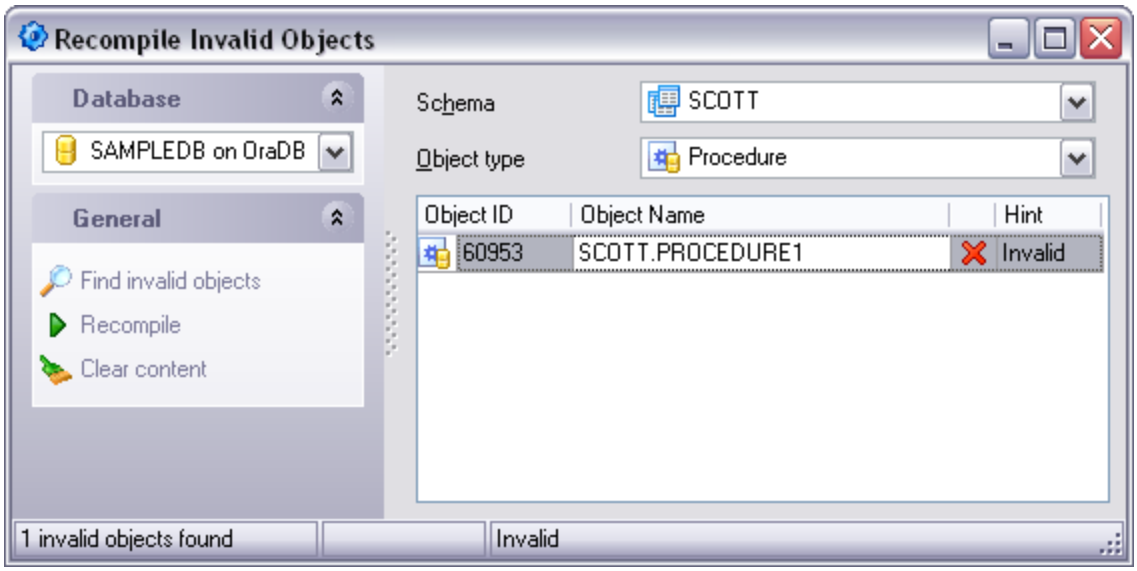


11.3.2 Working with recompile service

Select the schema and object type at the corresponding boxes; click the link at the navigation bar to perform the search.



To recompile an invalid object click corresponding link at the navigation bar.

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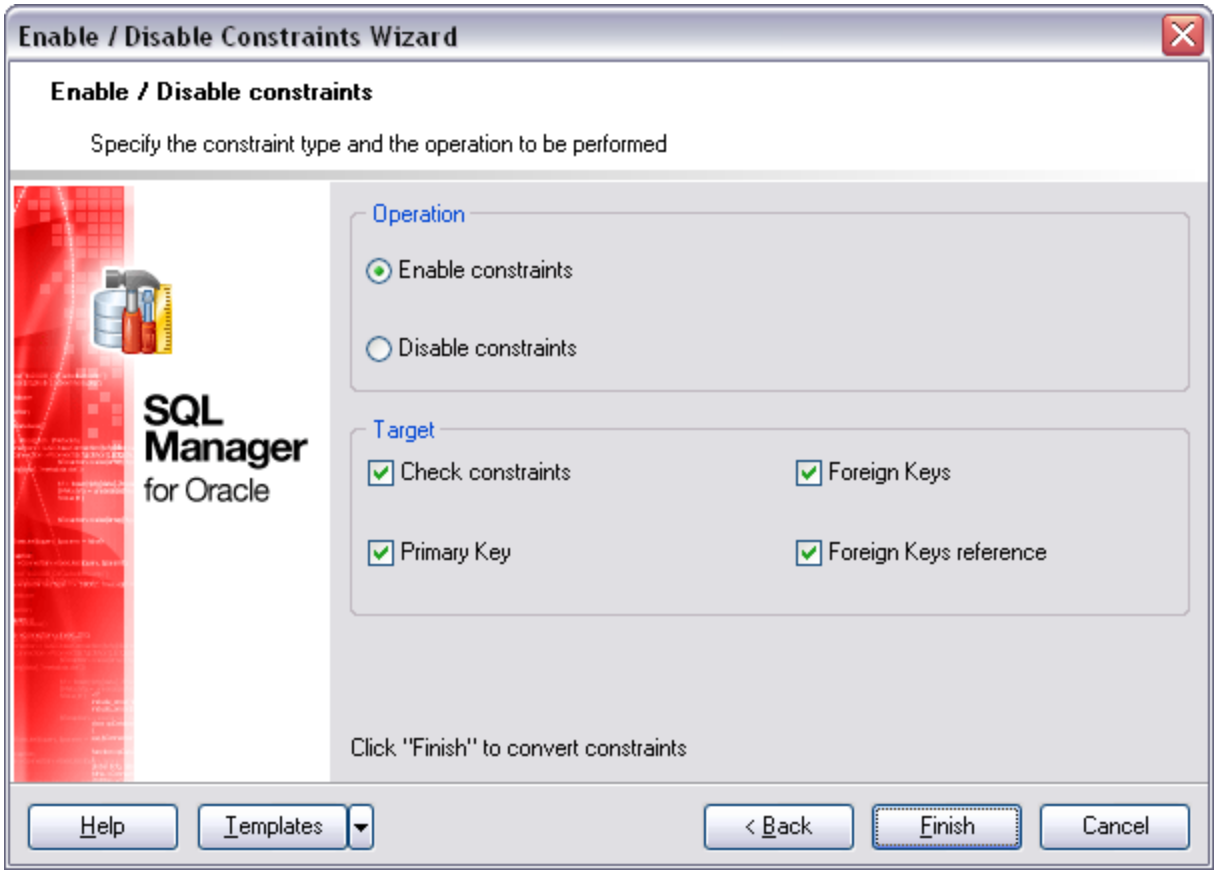
11.4 Enable/Disable constraints

The **Enable/Disable Constraints** wizard allows you to enable and disable constraints; it finds the them and converts them using Oracle statements.



To start the wizard please select the **Services | Enable/Disable Constraints** menu item.

See also:
Services

11.4.1 Selecting target table

At the first step please select target database from the list.

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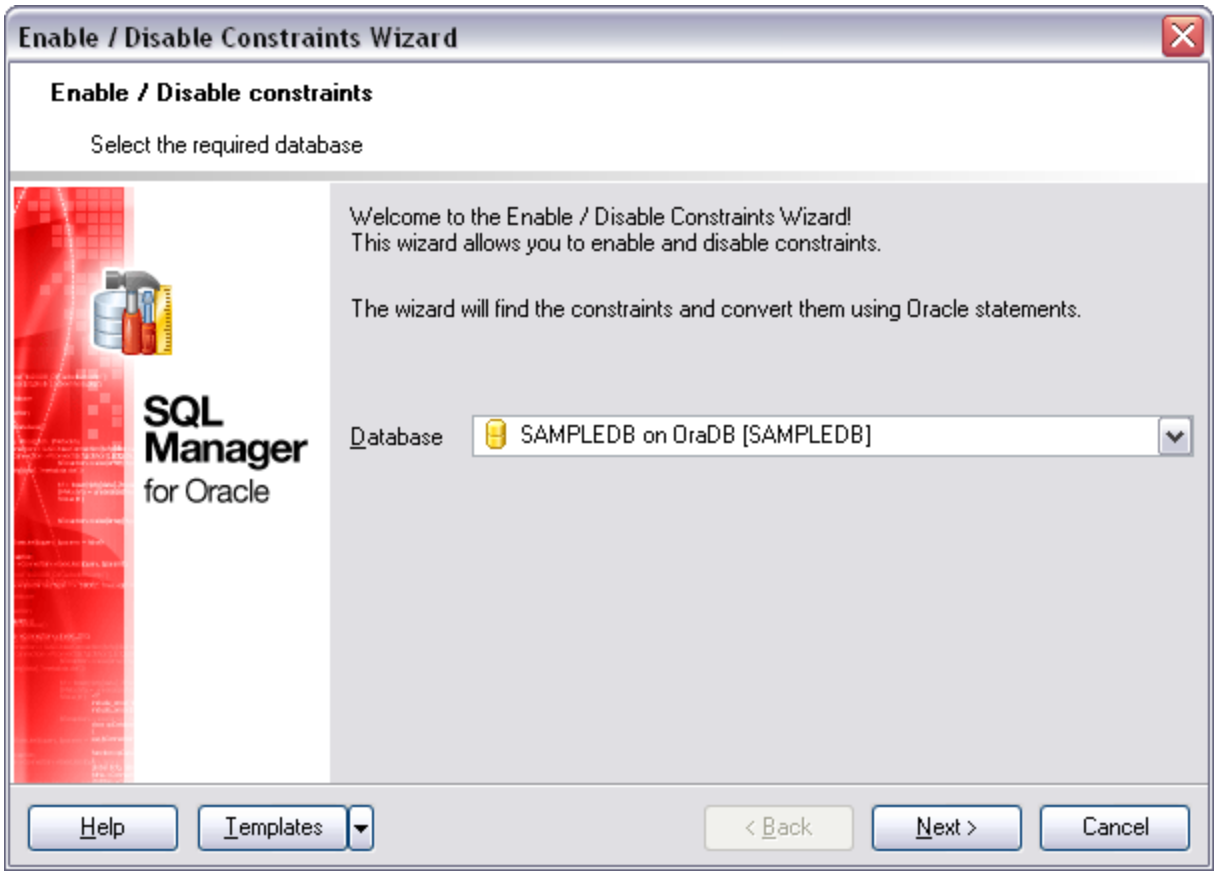
Enable / Disable Constraints Wizard
Enable / Disable constraints
Select the required database
Welcome to the Enable / Disable Constraints Wizard!
This wizard allows you to enable and disable constraints.
The wizard will find the constraints and convert them using Oracle statements.
SQL Manager for Oracle
Database
SAMPLEDB on OraDB [SAMPLEDB]
Help
Templates
< Back
Next >
Cancel

Having selected the database you need to choose the schema which contains the desired table.

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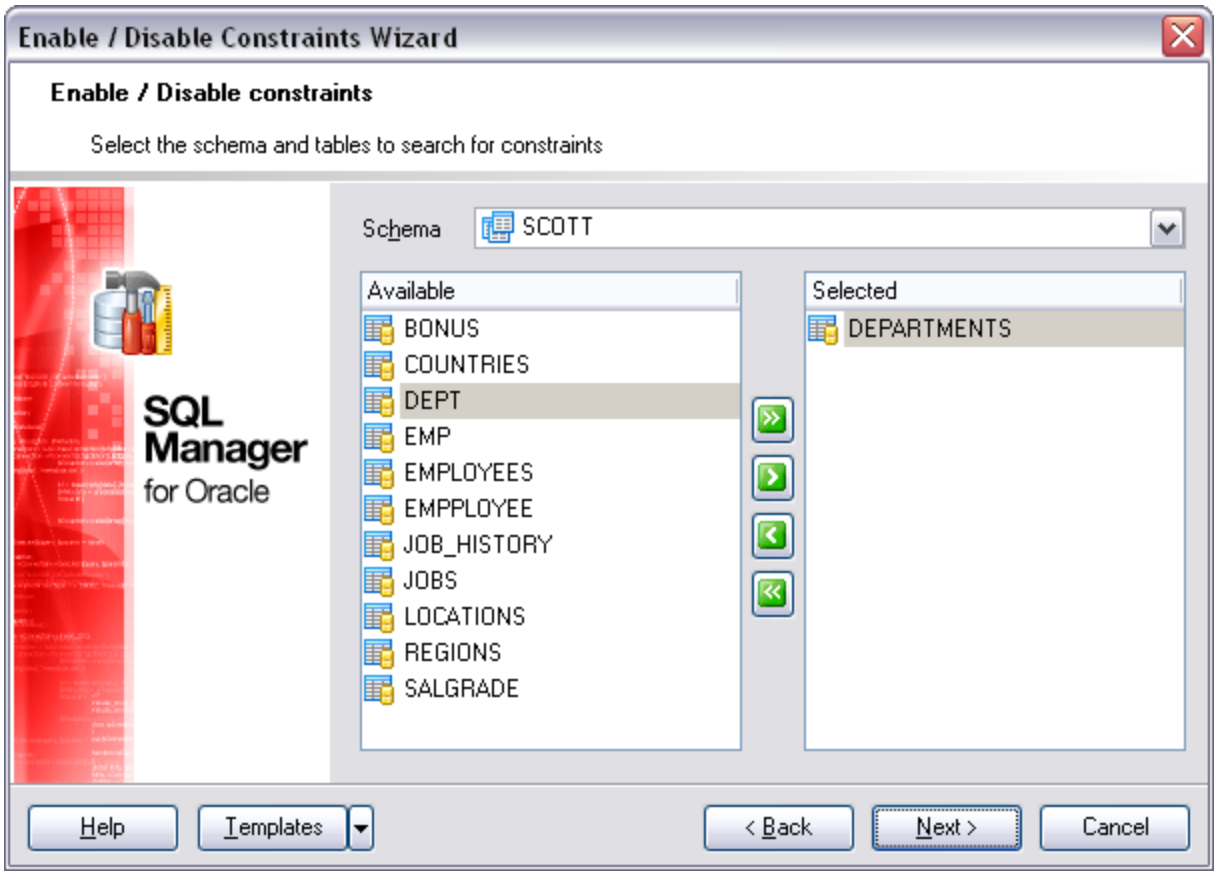

To include tables to the list, move them from the **Available** list to the **Selected** by double-clicking or dragging their names. To remove the objects from the list, move them back in the same way. You can also use the arrow buttons to move the selected objects (multiple selection can be performed using Ctrl or Shift).

11.4.2 Specifying operation

At this step you are to specify the desired operation to be performed and constraint types to be enabled/disabled.

Press **Finish** to start the process.

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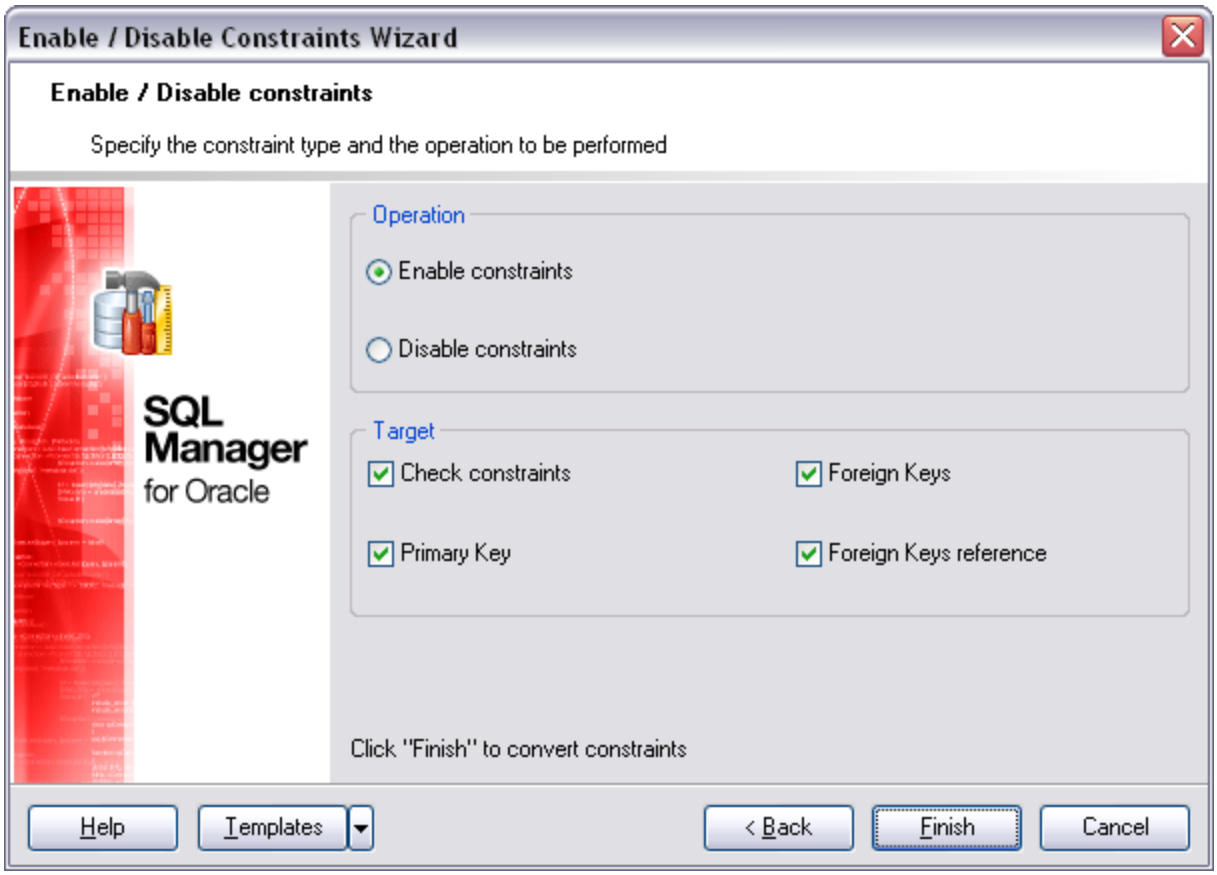

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11.5 Backup Database

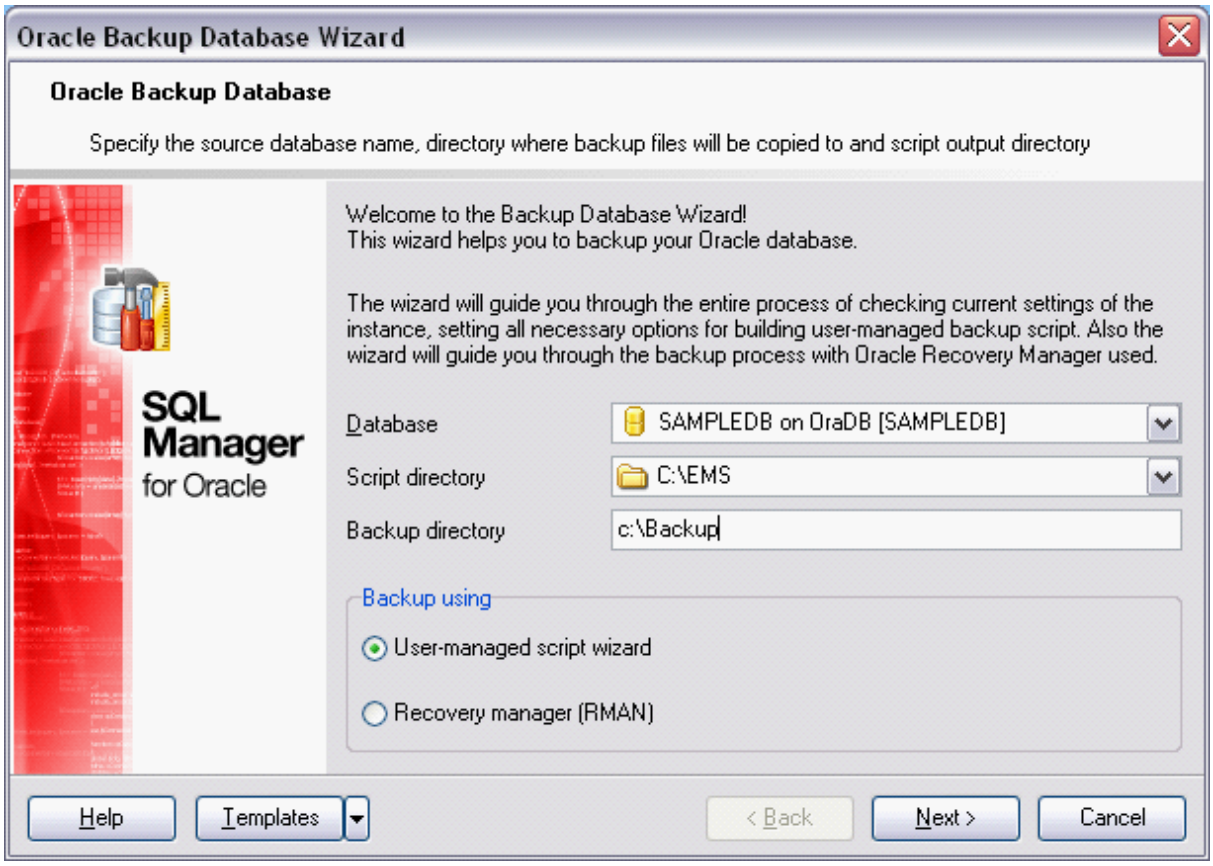
The **Backup Database** wizard is intended for creating backups of your Oracle database. During its work the script to perform backup will be created, which can be edited manually if needed.

Important: Please note that you should have a clear idea of the backup/restore mechanism
Note that a wrong combination of backup/restore settings can damage your database!

To start the wizard please select the **Services | Backup** menu item.

The wizard will guide through the entire process - checking instance current settings, tuning all the options necessary both for **User-managed backup script** and **Oracle Recovery Manager backup**.

First, at the corresponding boxes specify the desired database for backup, destination directories for the script and the backup itself to be stored.


Oracle Backup Database Wizard
Oracle Backup Database
Specify the source database name, directory where backup files will be copied to and script output directory
Welcome to the Backup Database Wizard!
This wizard helps you to backup your Oracle database.
The wizard will guide you through the entire process of checking current settings of the instance, setting all necessary options for building user-managed backup script. Also the wizard will guide you through the backup process with Oracle Recovery Manager used.
SQL Manager for Oracle
Database
SAMPLEDB on OraDB [SAMPLEDB]
Script directory
C:\EMS
Backup directory
c:\Backup
Backup using
User-managed script wizard
Recovery manager (RMAN)
Help
Templates
< Back
Next >
Cancel

Then at the **Backup using** group select the desired backup strategy:

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User-managed backup script
or
Recovery manager (RMAN)

See also:
Restore Database
Services

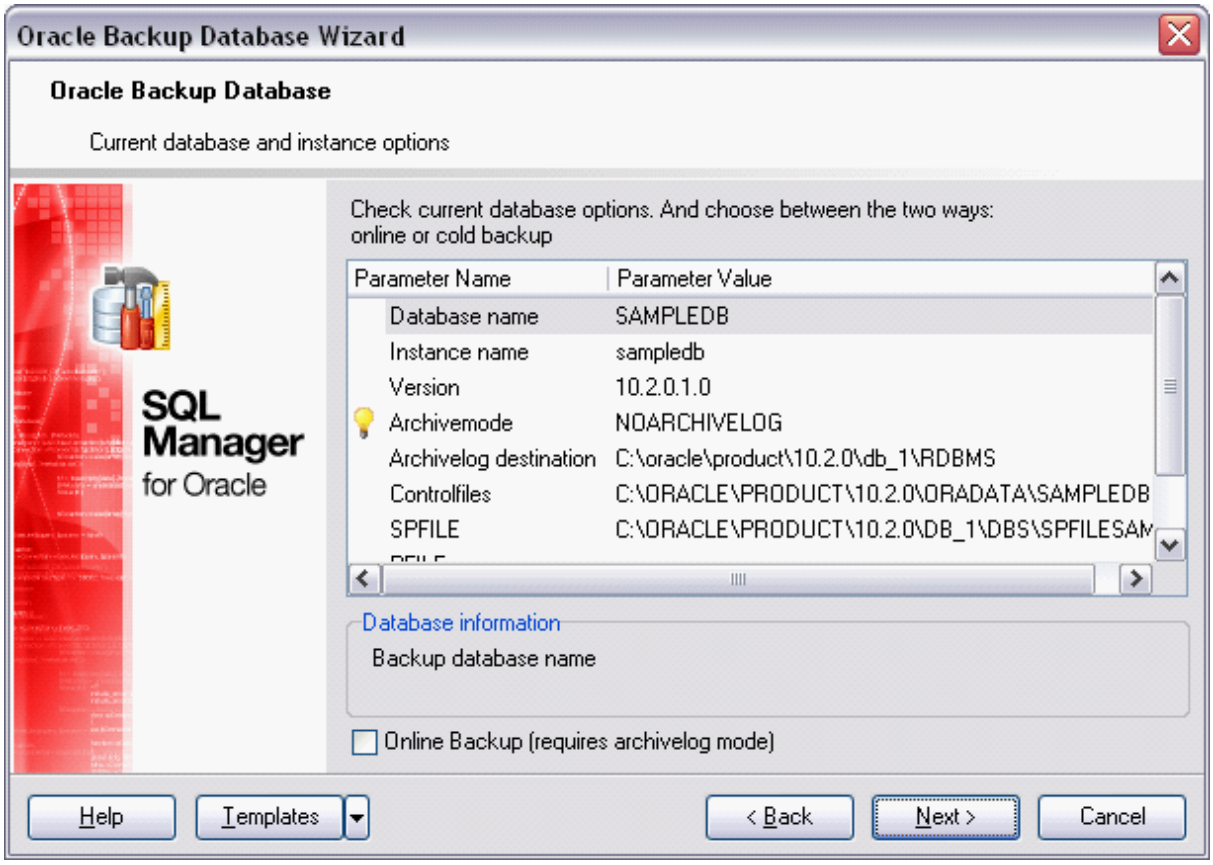
11.5.1 Checking DB and instance options

Database and destination directories specified at the previous step, please check current database settings for selected **User-managed script** backup strategy.

Then select the desired backup mode - online or cold.

During cold backup the database is shut down and copying of the datafiles is performed by means of the operating system itself.

In online mode there is no need to shutdown the database but the it needs to be in the ARCHIVELOG mode.



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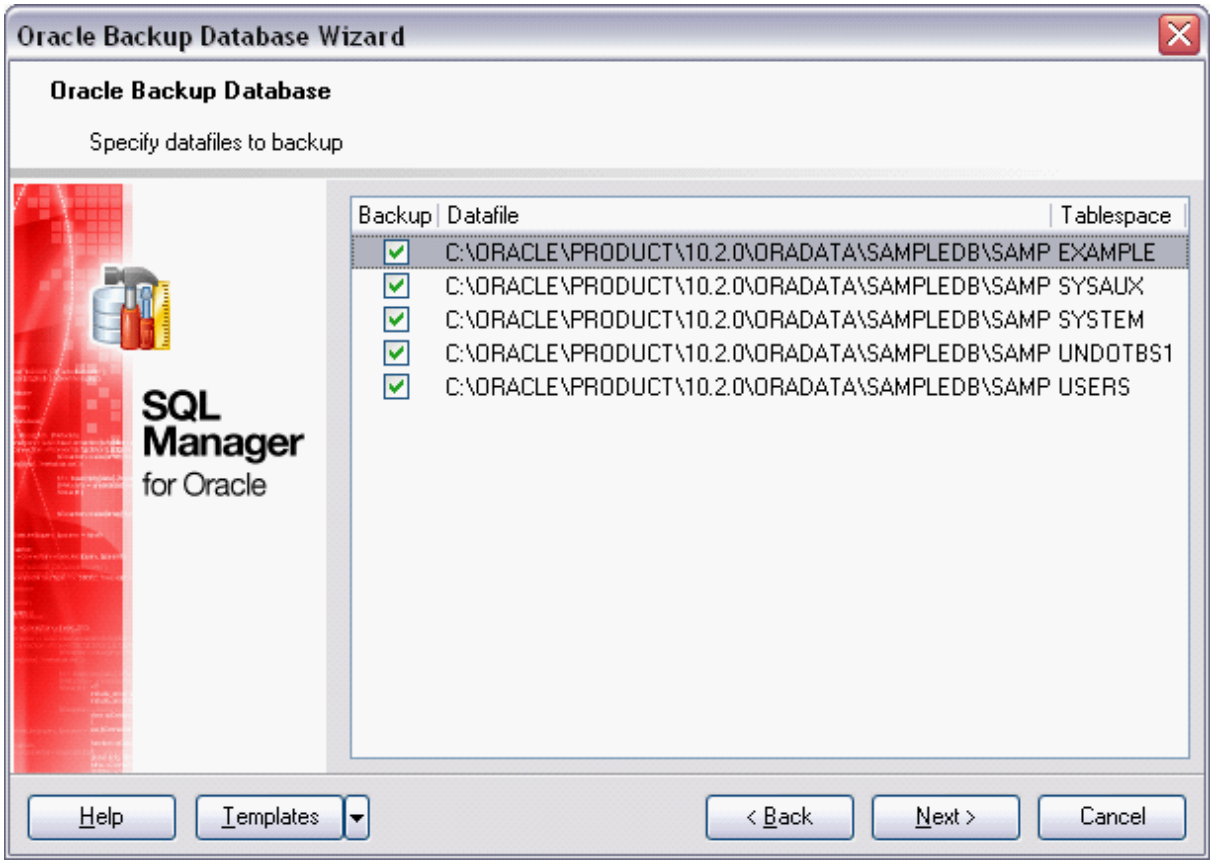
11.5.2 User-managed script

11.5.2.1 Selecting datafiles

At this step of the Wizard you need to select the datafiles for backup. By default all the datafiles of the database are selected; uncheck the unwanted ones.



11.5.2.2 Setting additional options

The additional options of the **Backup Database Wizard** are set at this step.

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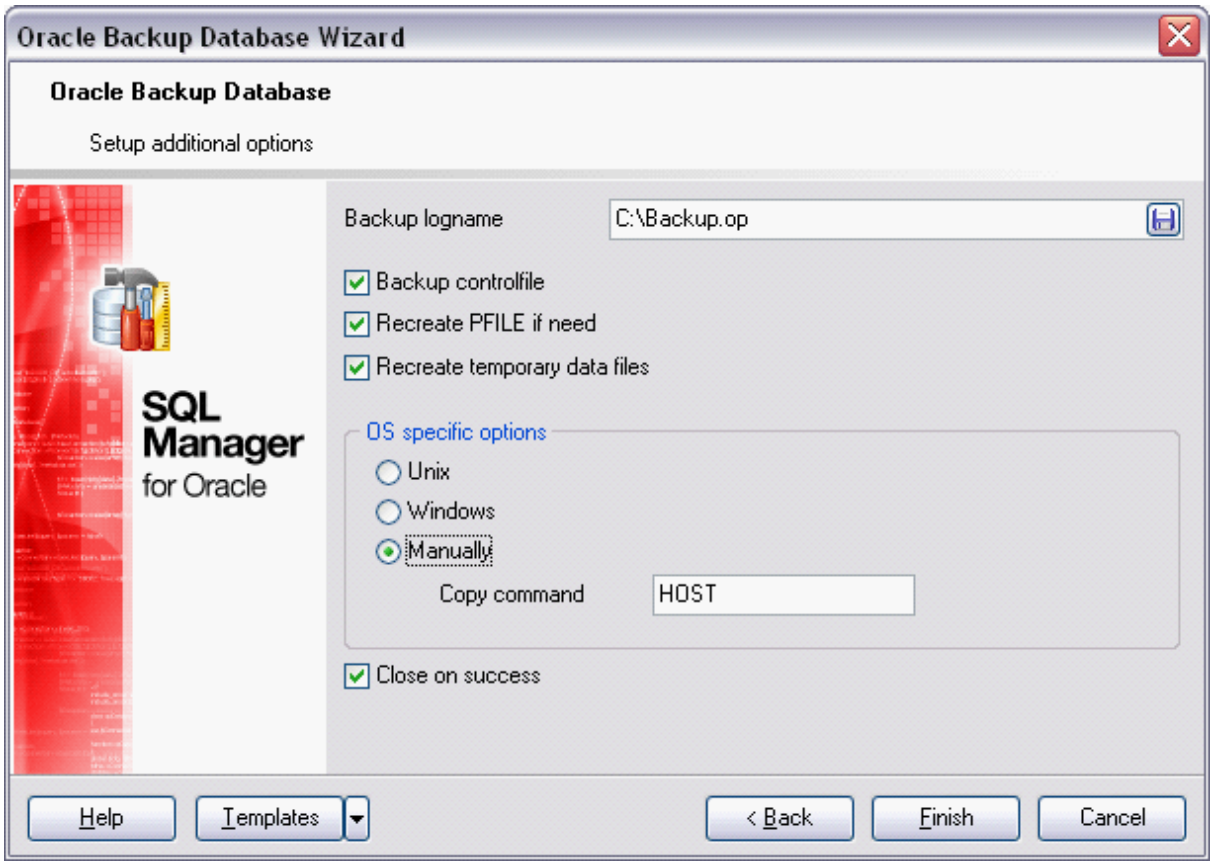

Backup longname
A full name of the backup options file to be created.

Backup controlfile
Specify whether the controlfile should be included into backup.

Recreate PFILE if need
Option checked, the appropriate command which recreates the PFILE from existing SPFILE is added to the backup script.

Recreate temporary data files
Specify whether the Oracle temporary datafiles should be recreated.

OS specific options
Specify the OS which commands should be used in the script generated.

Close on success
Closes wizard window automatically on successful completion.

Press **Finish** to start the process.

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11.5.3 Recovery Manager (RMAN)

11.5.3.1 Specifying datafiles

At this step of the **Backup Database Wizard** you need to seelect backup type and set some additional backup options for RMAN backup strategy.

Backup type
Full backup is a backup of a datafile that includes every allocated block in the file being backed up.

An **Incremental backup** is either a level 0 backup, which includes every block in the file except blocks compressed out because they have never been used, or a N - level backup (N between 1 and 4), which includes only those blocks that have been changed since the parent backup was taken.
The goal of an incremental backup is to back up only those data blocks that have changed since a previous backup. You can use it to create incremental backups of datafiles, tablespaces, or the whole database.

Delete expired
Adds to the RMAN script a special command which removes expired archievelogs.

Autobackup controlfile
Checking the option ensures that a usable backup of the control file is included with the backup and tagged in order to simplify restoring the control file with the rest of the database. (starting from version 9 of the server).

Snapshot controlfile name
All the changes made to the database when performing backup will be logged at the **Snapshot controlfile name** set (recommended for version 8 of the Server).

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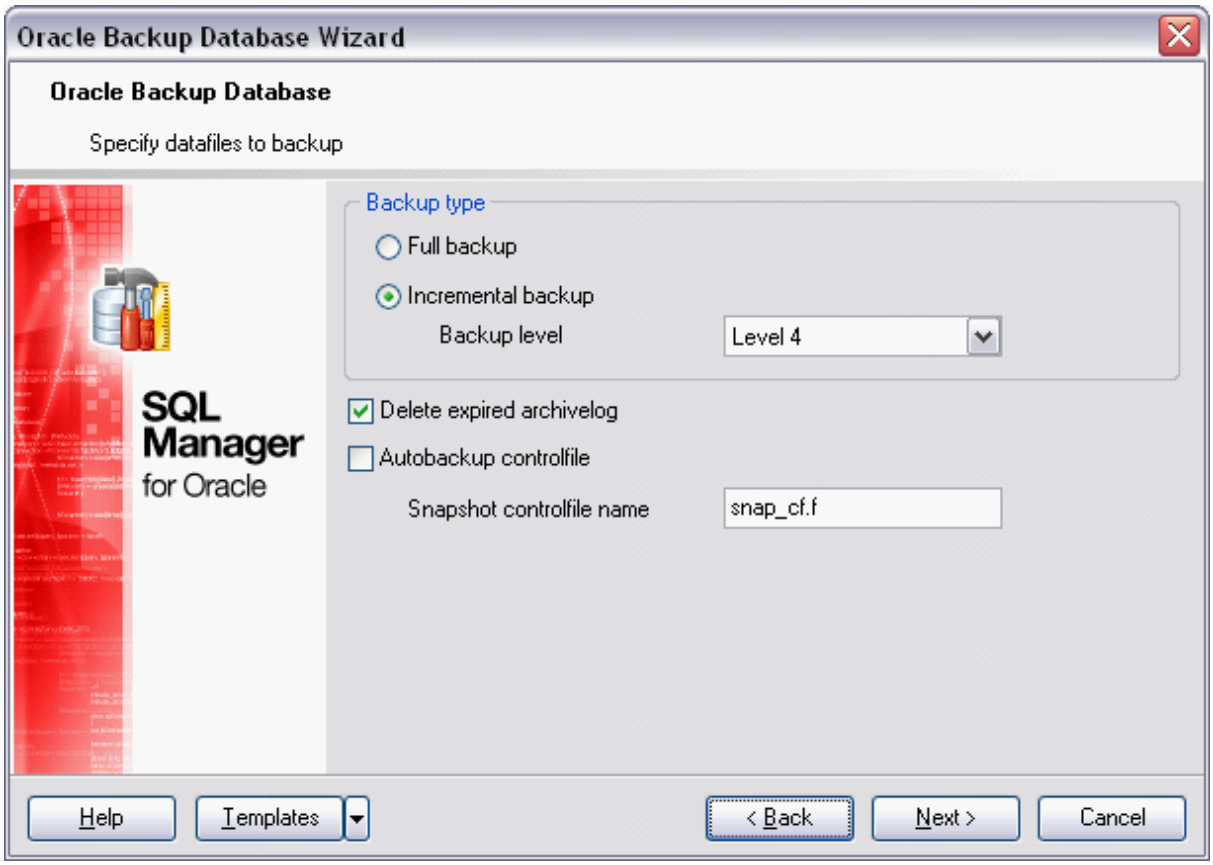

11.5.3.2 Setting additional options

The additional options of the **Backup Database Wizard** are set at this step.

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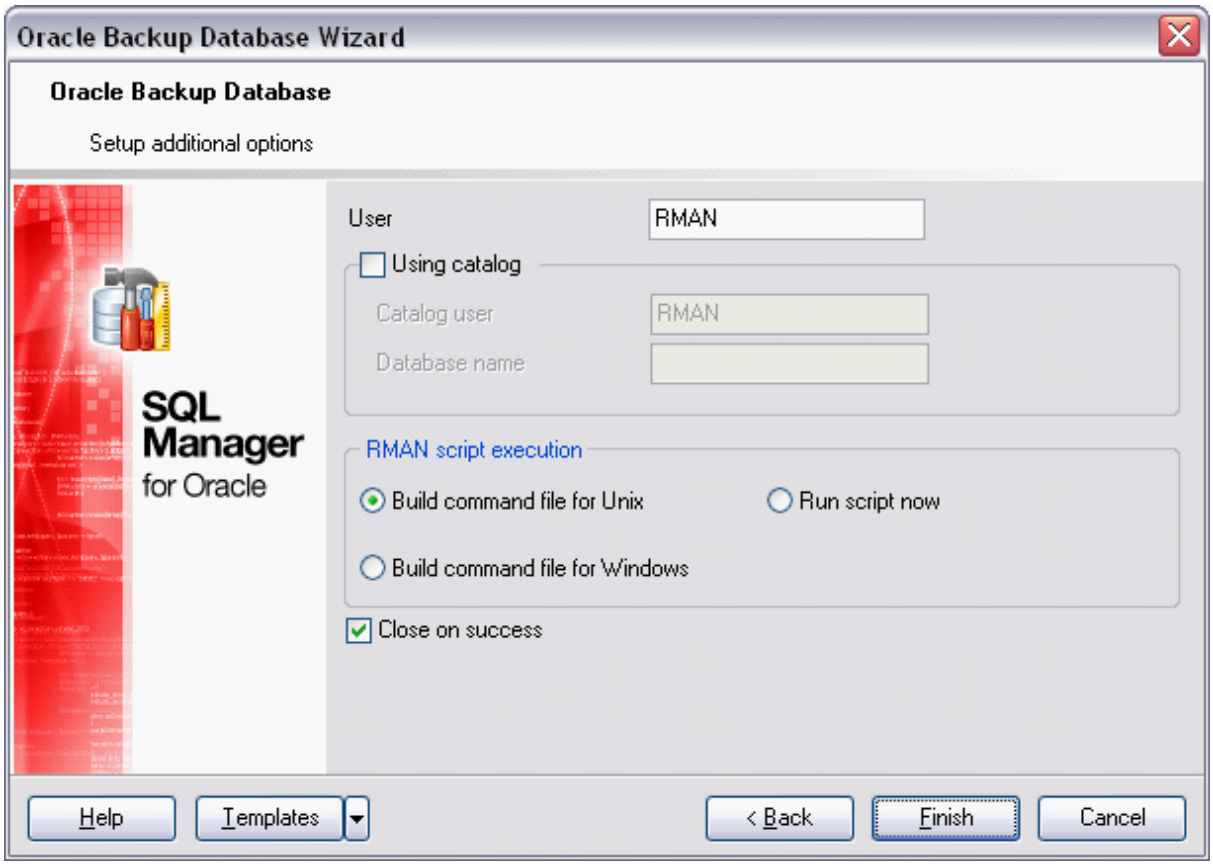

User
Target user under which the RMAN session will be created.

Using catalog
Catalog can be considered as a special database which stores backup settings. Specify **Catalog user** and **Database** name to use it.

RMAN script execution
Specify the OS which commands should be used in the script generated or select **Run script now** for immediate execution.

Close on success
Closes wizard window automatically on successful completion.

Press **Finish** to start the process.

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11.6 Restore Database

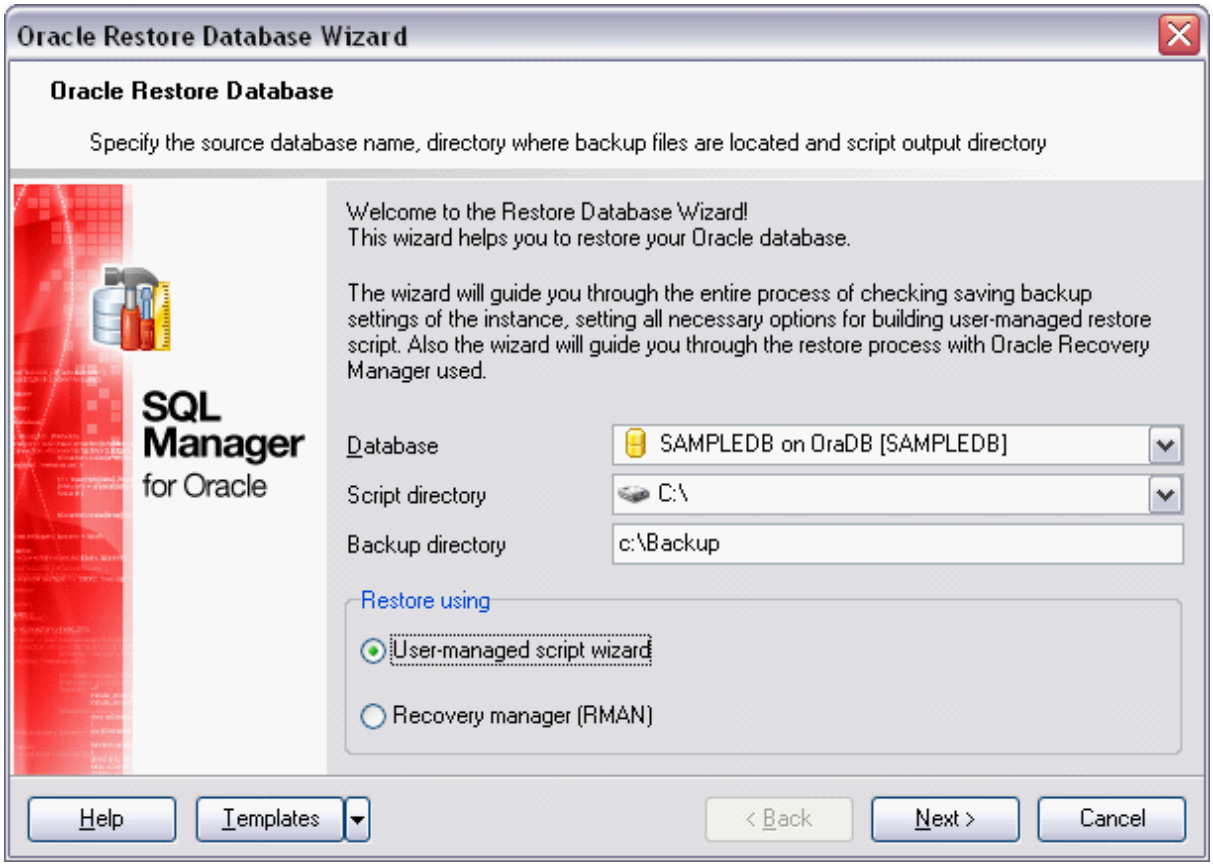
The **Restore Database** wizard is intended for restoring your Oracle database from backups. During its work the script to perform restore will be created, which can be edited manually if needed.

Important: Please note that you should have a clear idea of the backup/restore mechanism
Note that a wrong combination of backup/restore settings can damage your database!

To start the wizard please select the **Services | Restore** menu item.

The wizard will guide through the entire process - checking saving backup settings, tuning all the options necessary both for **User-managed script** and **Oracle Recovery Manager** restore.

First, at the corresponding boxes specify the desired database for restore into, locate the script and set the directory containing backup.


Oracle Restore Database Wizard
Oracle Restore Database
Specify the source database name, directory where backup files are located and script output directory
Welcome to the Restore Database Wizard!
This wizard helps you to restore your Oracle database.
The wizard will guide you through the entire process of checking saving backup settings of the instance, setting all necessary options for building user-managed restore script. Also the wizard will guide you through the restore process with Oracle Recovery Manager used.
SQL Manager for Oracle
Database
SAMPLEDB on OraDB [SAMPLEDB]
Script directory
C:\
Backup directory
c:\Backup
Restore using
User-managed script wizard
Recovery manager (RMAN)
Help
Templates
< Back
Next >
Cancel

See also:
Backup Database
Services

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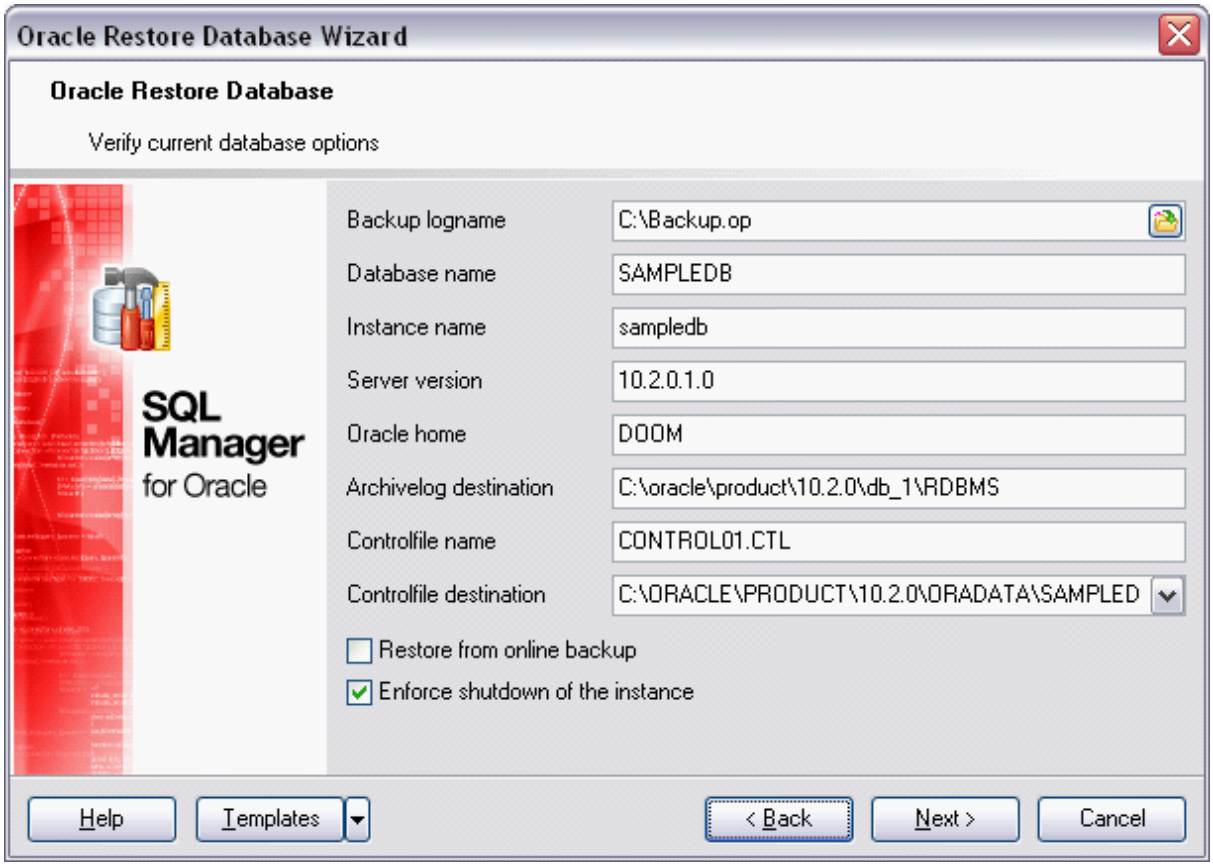
11.6.1 User-managed script

11.6.1.1 Verifying current settings

Please check current database settings for selected **User-managed script** backup strategy.



Specify the server home at the **Oracle Home** field.

Restore from online backup
The previously created online backup will be used to restore the database.

Enforce shutdown of the instance
Adds the command to shutdown the server into script.

11.6.1.2 Selecting datafiles

At this step of the Wizard you need to select the datafiles to be restored. By default all the datafiles of the backup are selected; uncheck the unwanted ones.

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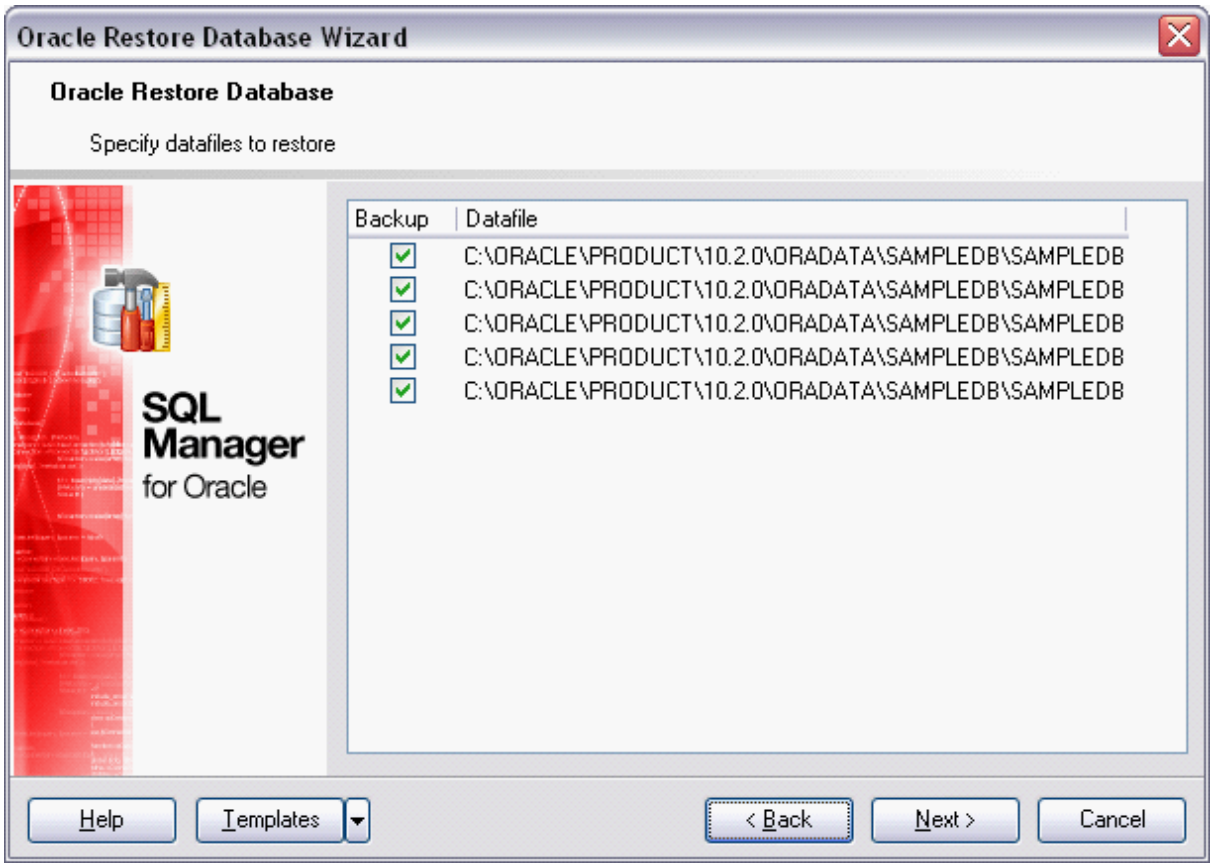

11.6.1.3 Setting additional options

The additional options of the **Restore Database Wizard** are set at this step.

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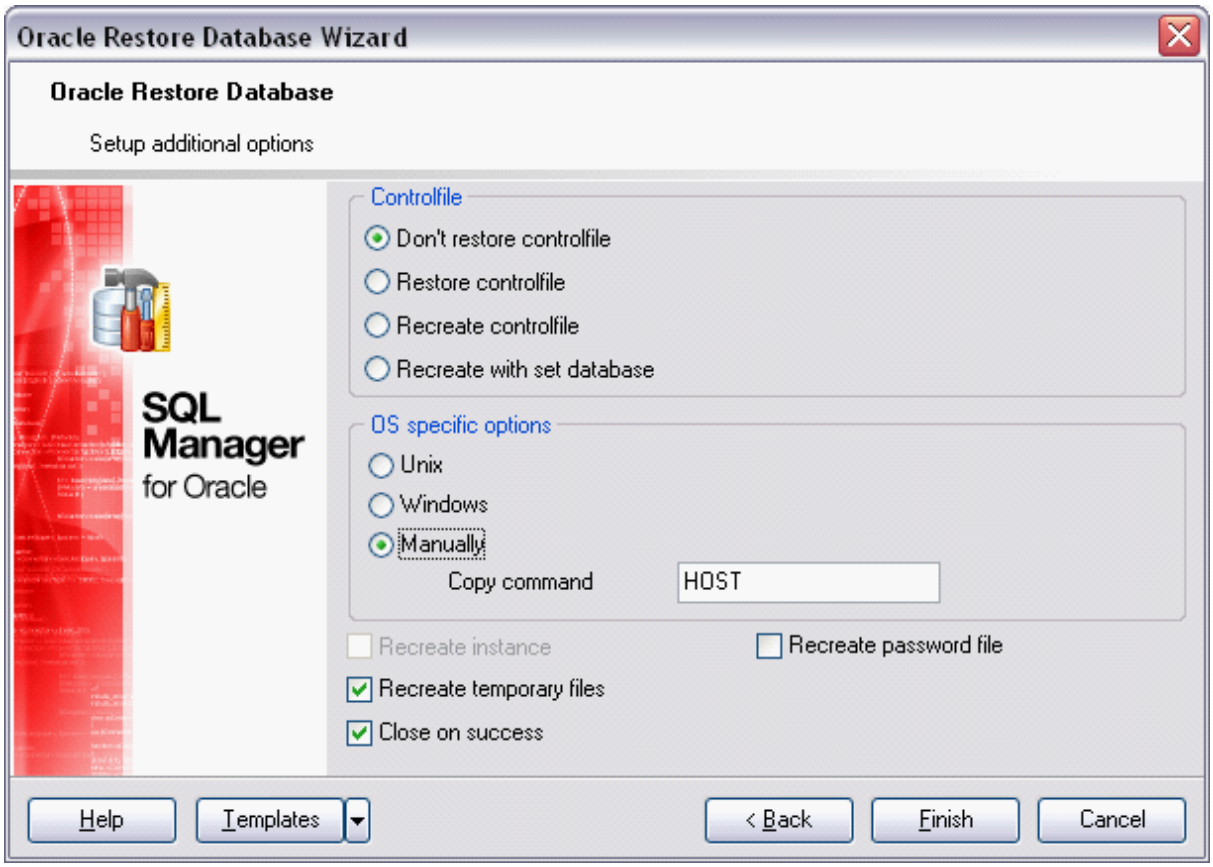

Controlfile
Specify whether the controlfile should be restored.

OS specific options
Specify the OS which commands should be used in the script generated or select **Run script now** for immediate execution.

Close on success
Closes wizard window automatically on successful completion.

11.6.2 Recovery Manager (RMAN)

11.6.2.1 Setting additional options

The additional options of the **Restore Database Wizard** are set at this step.

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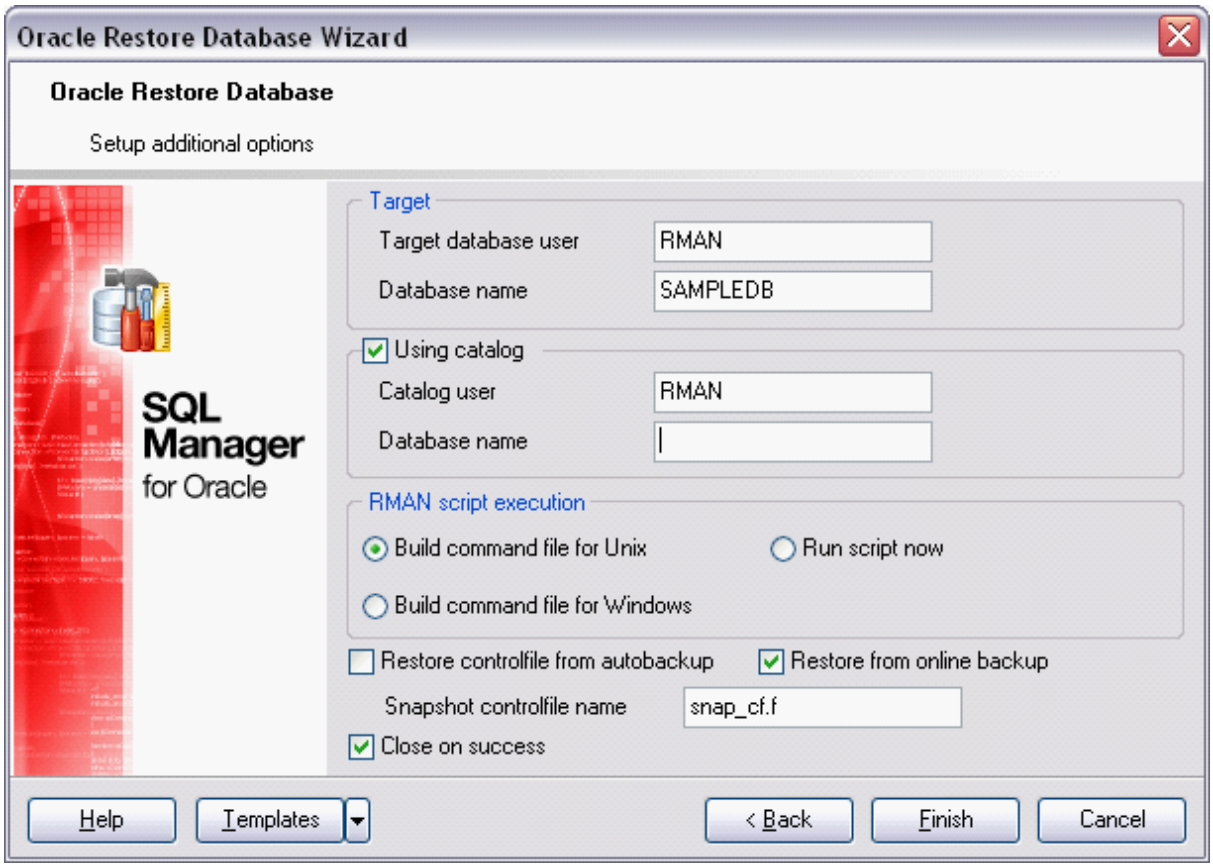

User
Target user under which the RMAN session will be created.

Using catalog
Catalog can be considered as a special database which stores backup settings. Specify **Catalog user** and **Database** name to use it.

RMAN script execution
Specify the OS which commands should be used in the script generated or select **Run script now** for immediate execution.

Restore controlfile from autobackup
Restores the control file from autobackup if checked, otherwise you need to specify at the corresponding field the name of the snapshot controlfile containing all the changes (if any) made to the database.

Restore from online backup
The previously created online backup will be used to restore the database.

Close on success
Closes wizard window automatically on successful completion.

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Part

12 SQL Manager Options

SQL Manager 2007 for Oracle provides full customization of program interface, window behavior, various options of all tools and more. This chapter tells you how to use all these options.

Environment Options
General SQL Manager 2007 for Oracle options: environment style, confirmations, window restrictions, DB Explorer, SQL Editor, SQL Monitor, Visual Query Builder options and more.

Editor Options
Customizing of all the SQL editors - SQL Editor, SQL Script, and more.

Visual Options
Customizing program interface - bars, trees, menus, etc.

Keyboard Templates
Keyboard templates for quicker editing SQL.

Besides, the Options dialogs allows you to export all program settings to a *.reg file for future use, e.g. on another machine (see **Save Settings** for details).

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12.1 Environment Options

Environment Options allow you to customize general SQL Manager 2007 for Oracle options. To open the **Environment Options** window select the **Options | Environment Options** menu item.

- **Preferences**
- **Confirmations**
- **Windows**
- **Tools**
  - DB Explorer
  - Object Editors
  - SQL Editor
  - SQL Monitor
  - SQL Script
  - Query Builder
  - Print Metadata
  - Data Export
- **Fonts**
- **Grid**
  - Data Options
  - Print Data
  - Color & Formats
  - Advanced
  - Column Options
- **Localization**

12.1.1 Preferences

Show splash screen on startup
Displays the splash screen on SQL Manager 2007 for Oracle startup.

Restore desktop on connect
On disconnecting from the database the database windows and their positions which were refreshed on connect will be restored.

Disable multiple instances
Prohibits running multiple instances of SQL Manager 2007 for Oracle.

Encrypted passwords
Encrypts passwords for connecting to databases in the Windows registry.

Show desktop panel (for MDI Environment style only)
Displays the Desktop Panel when no windows are open.

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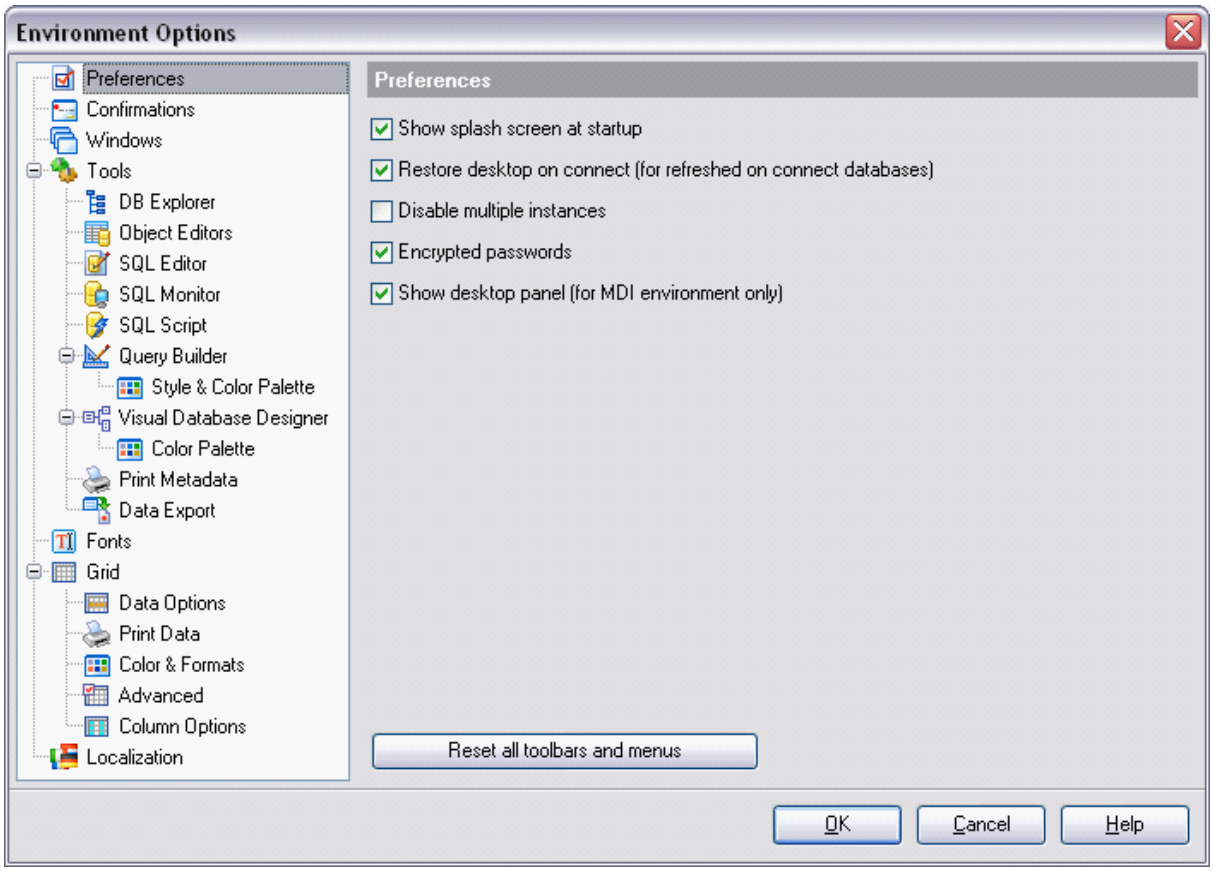

12.1.2 Confirmations

Confirm saving of object
If this option is on, the program requires confirmation each time you want to save changes in database object.

Confirm dropping object
If this option is on, the program requires confirmation for dropping database object.

Confirm exit from SQL Manager 2007 for Oracle
If this option is on, the program requires confirmation when you want to exit SQL Manager 2007 for Oracle.

Confirm transaction commit
If this option is checked, the program requires confirmation of the transaction commit.

Confirm transaction rollback
If this option is checked, the program requires confirmation of the transaction rollback.

Confirm deleting records
Enables displaying confirmation dialog on attempt to delete a record.

Confirm metadata changing
If this option is on, the program requires confirmation of metadata changing (See

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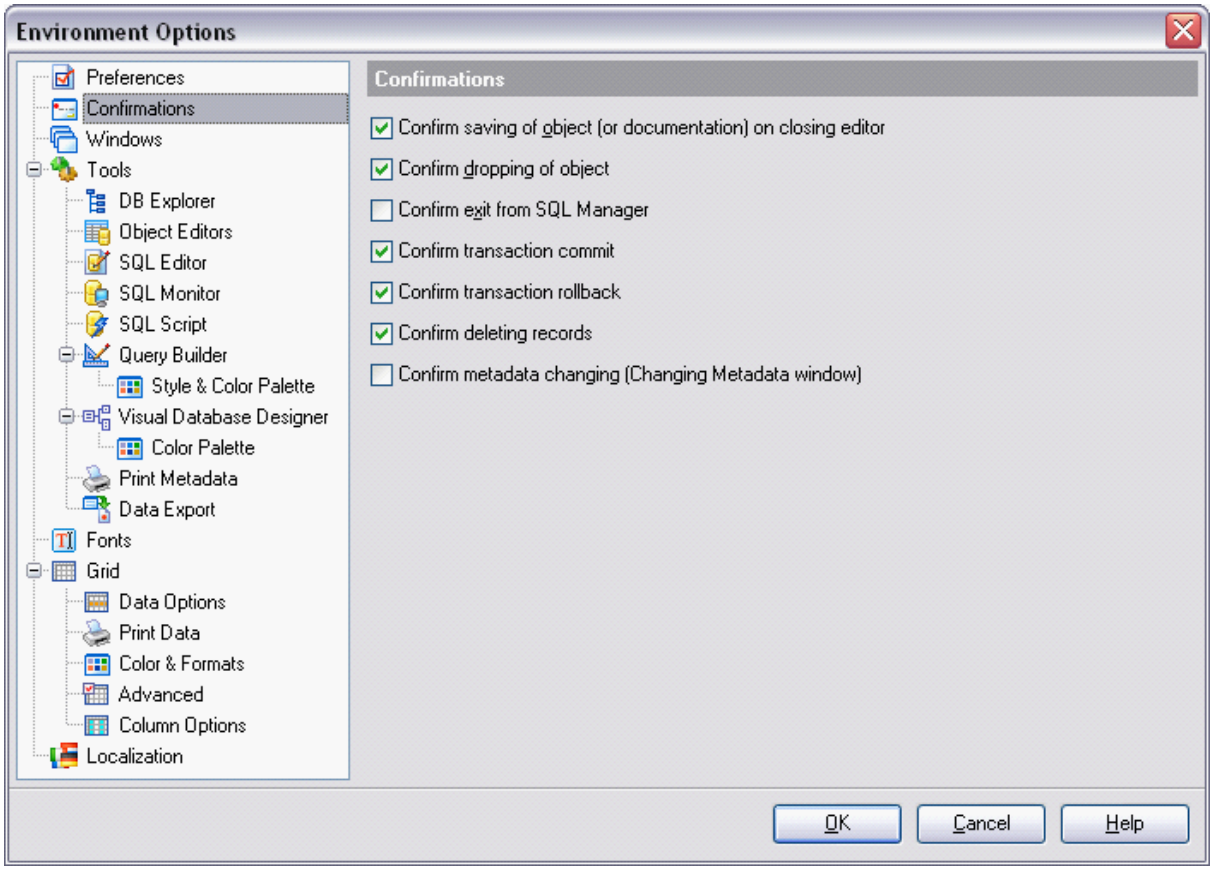
Changing Metadata window).



Availability:

Windows Full	Yes
Windows Lite	Yes

12.1.3 Windows

Environment Style
This switch allows you to define the basic window environment - MDI (like MS Office) or Floating Windows (like Borland IDE).

Windows restrictions
This option allows you to set the number of editors (Table Editor, SQL Editor, etc.) that can be opened at a time.

Zoom options
This option is available only if **Environment Style** is 'Floating-windows environment'. It allows you to set the window maximization size: full screen, restricted by main form, restricted by main form and DB Explorer.

Bar style for child forms
Allows you to define the location of action buttons. They can be located at the

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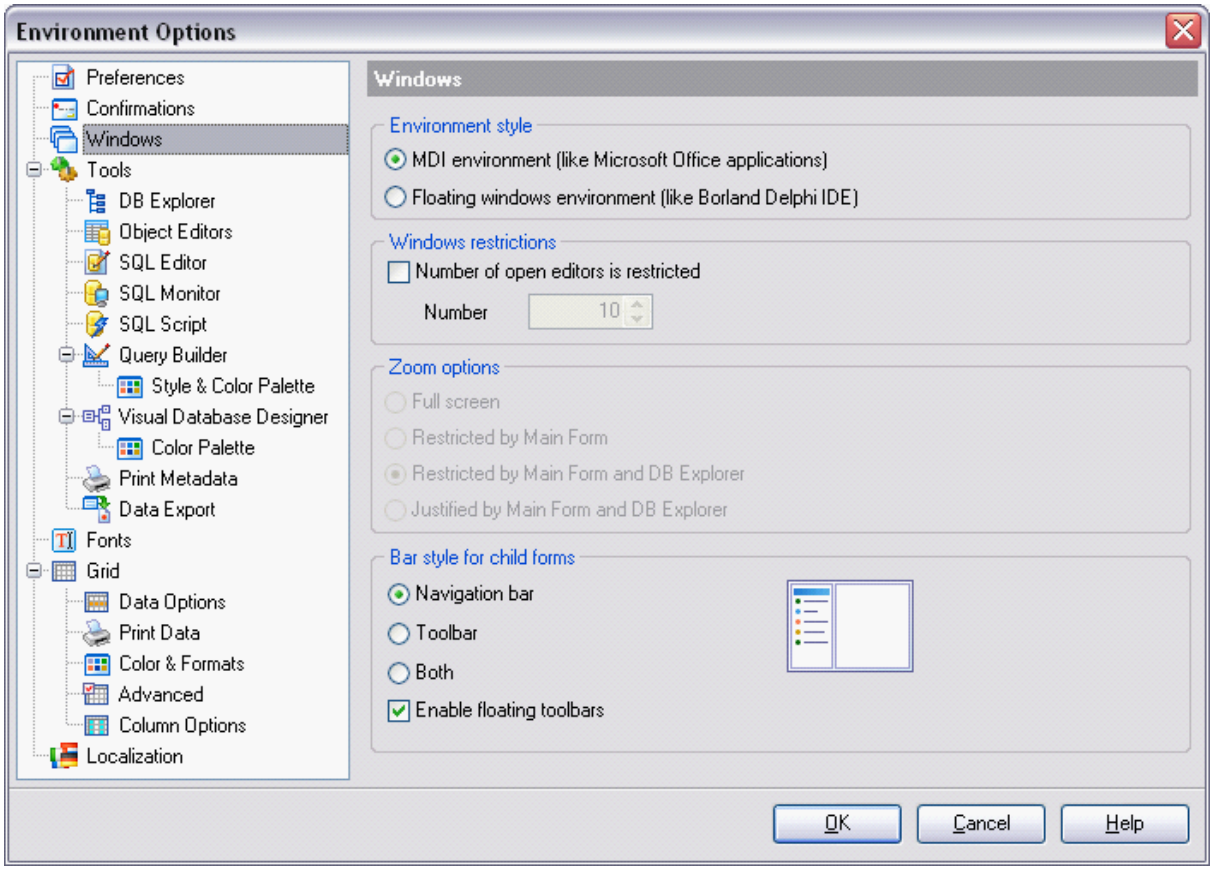
Navigation bar at the left and/or on the **Toolbar**.
You can also **Enable floating toolbars** feature by clicking the appropriate option.



12.1.4 Tools

☑ **Show only connected databases in drop-down menu**
Displays only connected databases in the dropdown menus of such tools as: QueryBuilder, SQL Script, etc.

☑ **Allow using parameters in query text**
This feature allows you to specify different values within a query in a popup dialog just before the query execution. Use the colon (':') character before some identifier (e.g. :P1) to specify a parameter within a query.

☑ **Add ROWID to simple SELECT queries to make them updatable**

Query execution/Getting data in object editors

☑ **Asynchronous execution**
Check this option to allow executing a query/getting object data in the background mode.

☑ **Fetch all data**
Enables fetching of all records when executing a query/getting object data.

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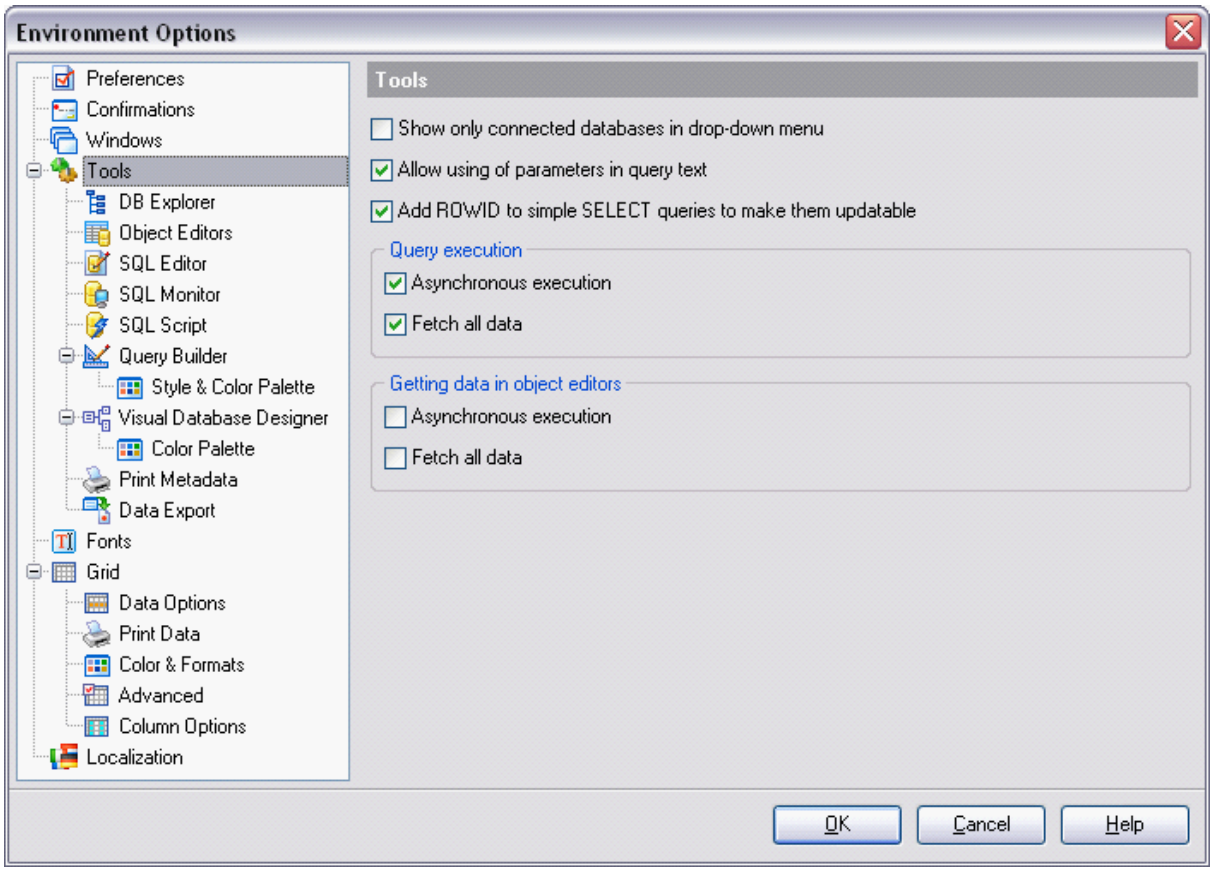

12.1.4.1 DB Explorer

Show database groups in DB Explorer
Shows/hides database groups in the DB Explorer tree.

Show Table Subobjects
Shows/hides table subobjects (fields, indices, etc.) in the DB Explorer tree.

Sort by aliases
Show registered databases sorted by its aliases in the DB Explorer tree.

Rename objects by editing in place
Allows you to edit object names right in the DB Explorer by selecting them and clicking on them one more time.

Recent objects count
Defines the number of objects displayed on the Recent tab of the DB Explorer.

Tables' Details in SQL Assistant
Switches the SQL Assistant mode for displaying table fields, indices, foreign keys, table status, definition or description.

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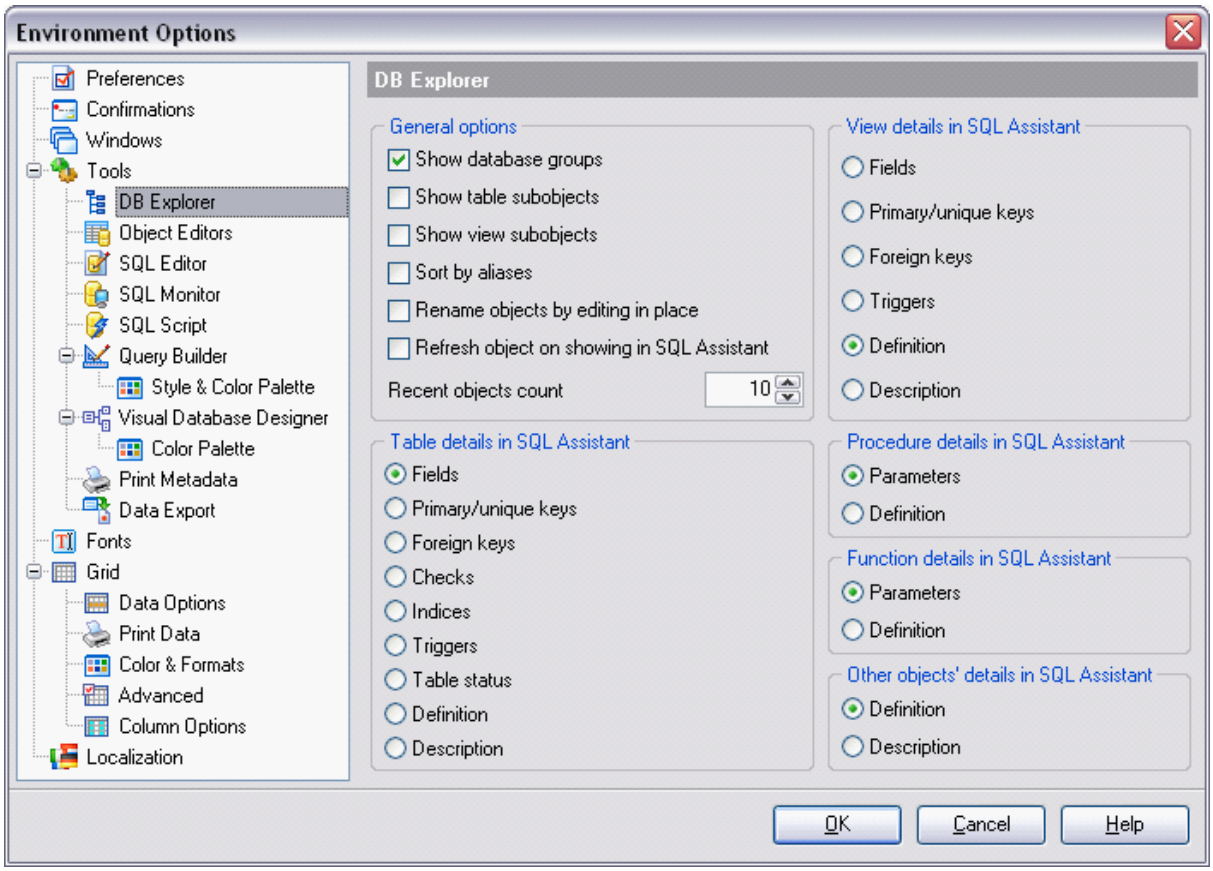

12.1.4.2 Object Editors

Convert created object's names to uppercase
Set this option to create all objects with names in uppercase.

Always open the Fields tab
Always opens the **Fields** tab default on activating the Table Editor.

Show Object Explorer
Enables/disables displaying the object explorer tree by default at the left of each Table Editor.

Do not retrieve record count for a table
Enable this option for not to retrieve record count, as this can take a long time for large tables.

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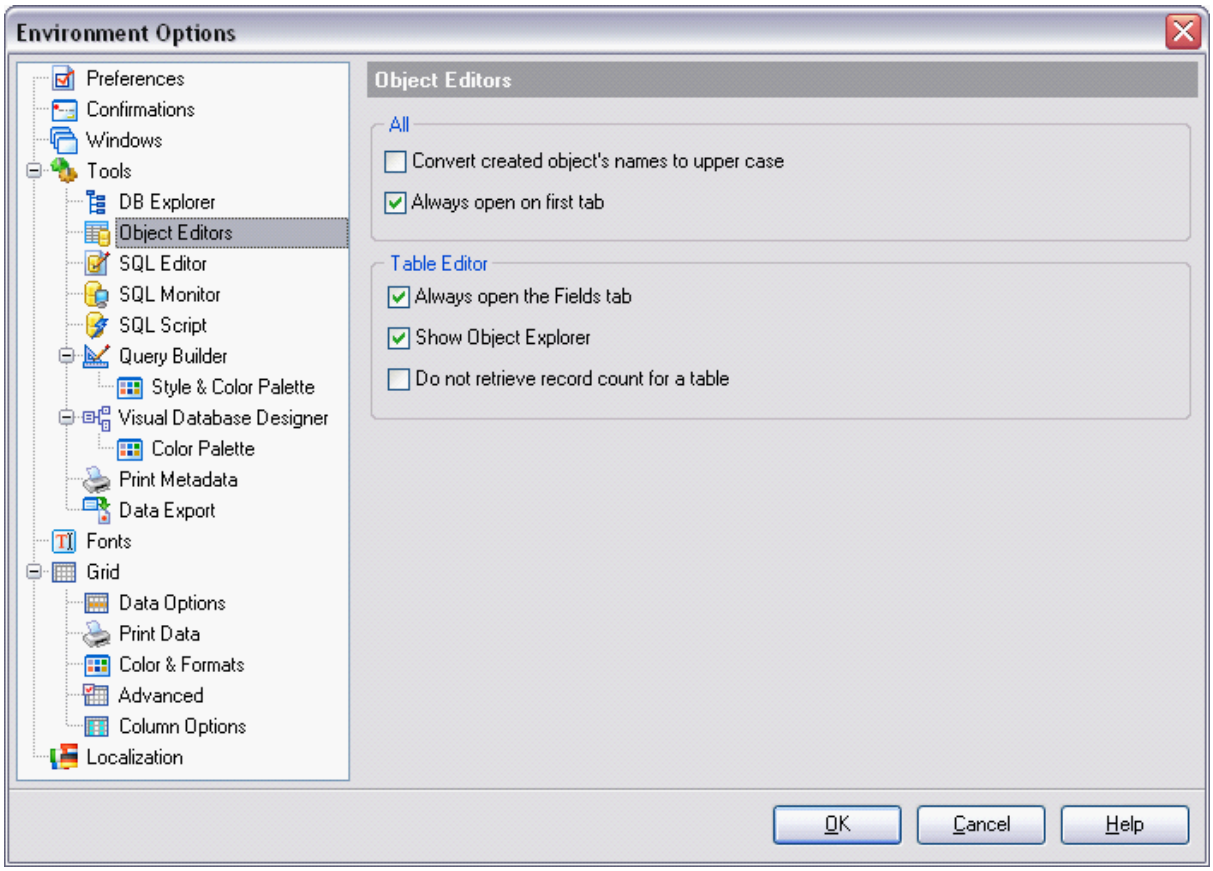

12.1.4.3 SQL Editor

Explain query
If this option is checked, query plan is displayed at the bottom of the SQL Editor window.

Show result for each query
If this option is checked and you execute two or more queries (divided by "go"), result for each query will be shown. Otherwise, only the result of the last query will be shown.

Execute selected text separately
Check this option to allow the separate executing of the selected text.

Write only successful executed queries to database SQL log file
If this option is checked, unsuccessful queries will not be saved to SQL Editor log file. (See **Log** page in the Edit Database Registration Info dialog)

Show results on Edit tab
Check this option to see query execution results on the same page with the query text, rather than on different pages.

Don't save queries automatically for the next sessions
If this option is checked, query text will not be saved. Otherwise, it will be saved in Windows registry.

Disable transaction confirmation
If this option is checked, no transaction confirmation will be required on closing Visual

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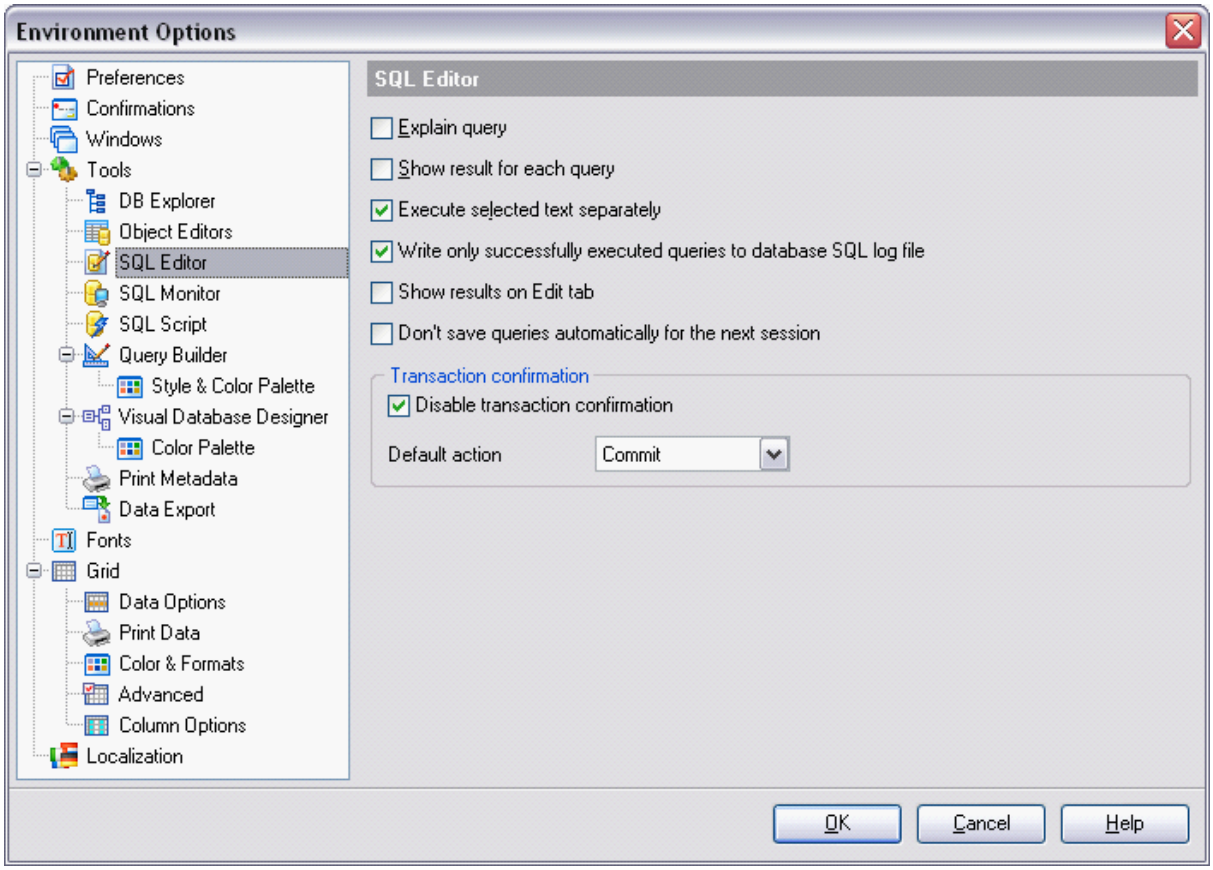
Query Builder and SQL Editor. Specify the default action ('Commit' or 'Rollback') and this action will be performed automatically each time when you exit **Query Builder** or **SQL Editor**. Check the Perform default action after each operation.



12.1.4.4 SQL Monitor

SQL Log
You can enable logging all the SQL Monitor events to a log file. Check option **Log SQL Monitor events to file** and set the name of the log file. To clear the log file after it reaches some definite size check **Clear log file when it is greater than** option and set the maximum file size in kilobytes.

Show non-SQL messages
Displays messages other than containing SQL ones.

Show time of operation
Dislpays execution time of logged operations.

Show always on top
Dislpays SQL Monitor tool always on top.

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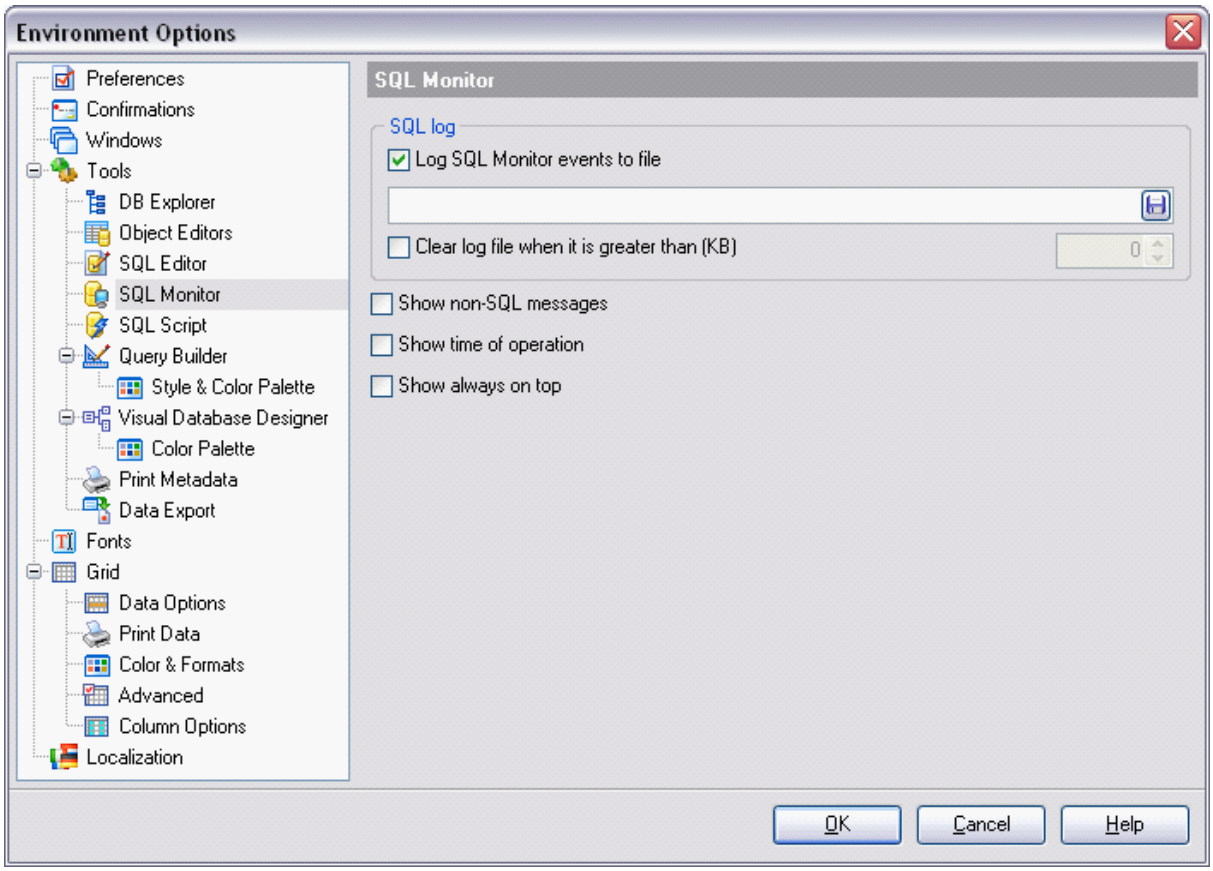

12.1.4.5 SQL Script

Abort script on error
If this option is checked, script execution is aborted when an error occurs.

Rollback on abort
This option is available only if **Abort Script on Error** is checked. This option evokes automatic rollback on script execution abort.

Enable parsing
With this option checked, SQL Script Editor parses loaded script to enable fast navigation on them in the Explorer tool.

Show message when done
Displays message box on finishing script execution.

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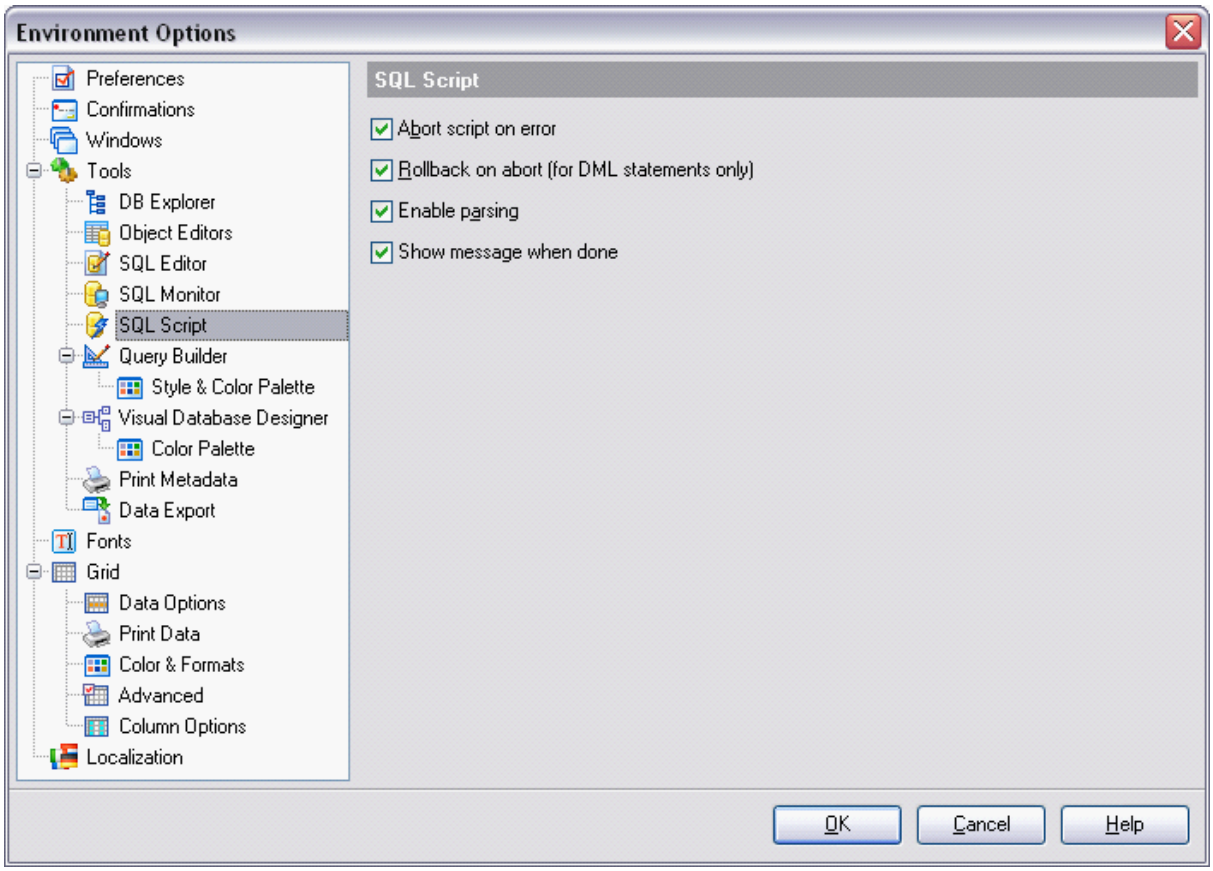

12.1.4.6 Query Builder

Allow SELECT queries only
When this option is checked INSERT, UPDATE, DELETE statements are not allowed on the **Builder** tab of Query Builder.

Select condition row
Displays the selected condition in different row on the **Criteria** and **Grouping Criteria** tabs of Query Builder.

Drag field name
Displays the dragged field name in the **Builder** area.

Hide selection when inactive
Hides the selection when Query Builder is inactive.

Show field types
Displays the field type next to the field in the table box.

Union all by default
Check this option to use UNION ALL expression in Query Builder by default.
The UNION keyword enables you to include the results of two SELECT statements in one resulting table.
The ALL parameter incorporates all rows into the results, including duplicates. If not specified, duplicate rows are removed.

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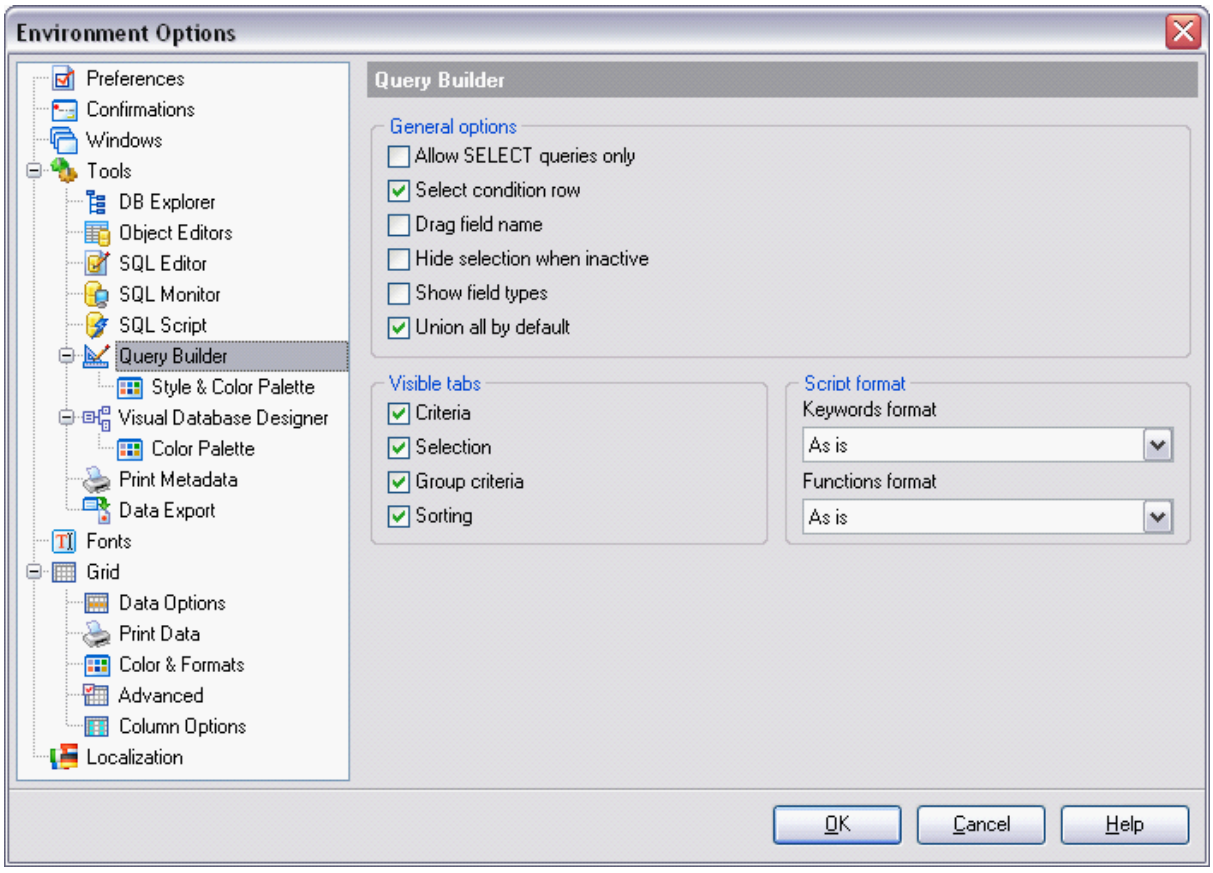
Visible Tabs
These options specify which Query Builder tabs are available and which are not. Check boxes to make the appropriate tabs visible.

Script Format
These options specify the case formatting of keywords and functions in query text on the **Edit** tab. **As is** saves the original case, **Uppercase** sets all the keywords/functions to upper case, **Lowercase** sets all the keywords/functions to lower case, and **First upper** sets the first letters of all keywords/functions to upper case.

You can set style and color for all Query Builder objects by using Style and Color Palette.



12.1.4.6.1 Style & Color Palette

Style
These options specify how Query Builder objects look like - 3D, flat, etc.

Color Palette page
These options define colors of different Query Builder elements: condition row, active caption, table client area, etc. Click an item to select a color for the appropriate Query Builder element.

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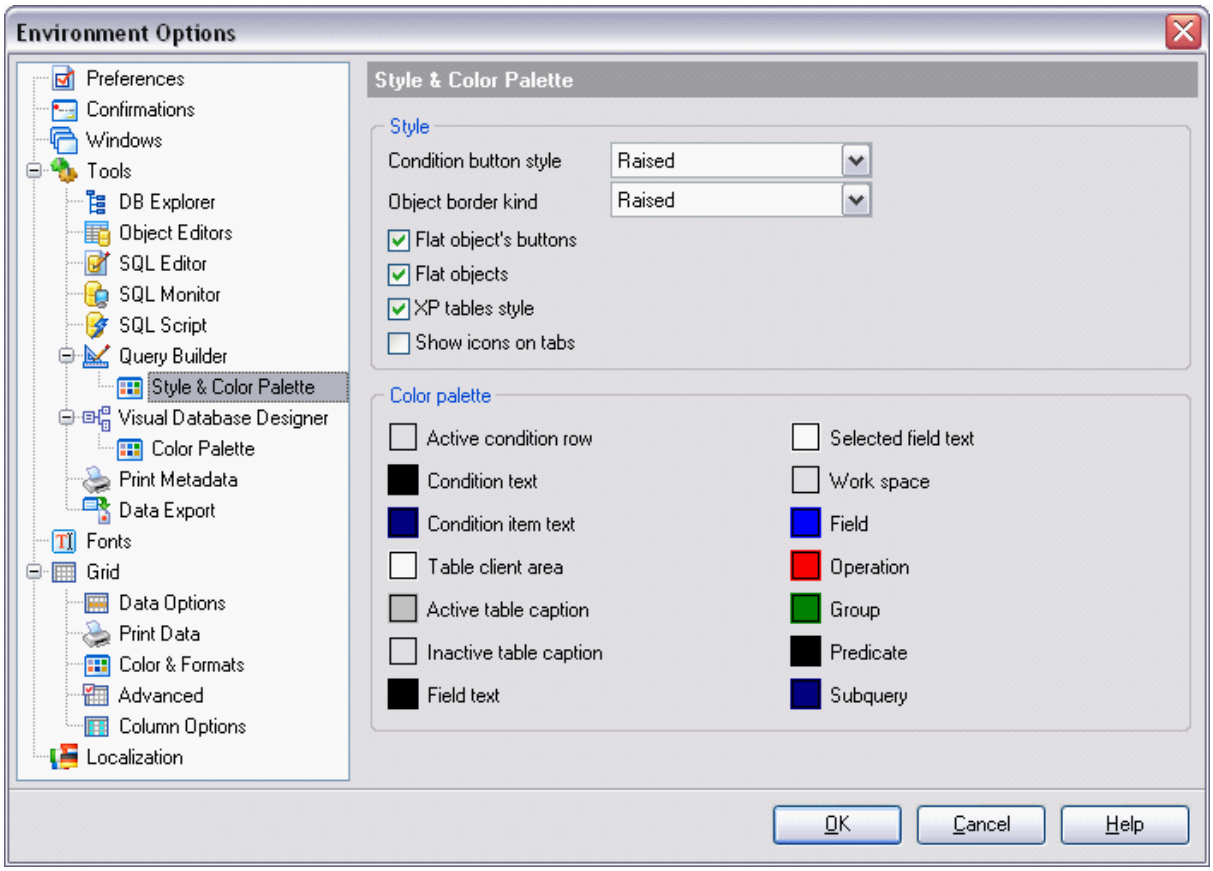

12.1.4.7 Visual Database Designer

Model notation
When you work in Visual Database Designer, you can choose one of the following modeling notations:

- Integration DEFinition for Information Modeling (IDEF1X) notation
- Information Engineering (IE) notation

The IDEF1X and IE notations use different symbols to represent entity and table relationships.

Draw PRIMARY KEY fields separately
Separates primary key fields from other fields with the line.

Draw entities icons
Displays icons at the left of entity header according to its type.

Draw attributes icons
Displays icons at the left of attribute according to its type (primary key, foreign key, ordinary field).

Show grid
Displays dots on the diagram area to make the grid visible.

Snap to grid

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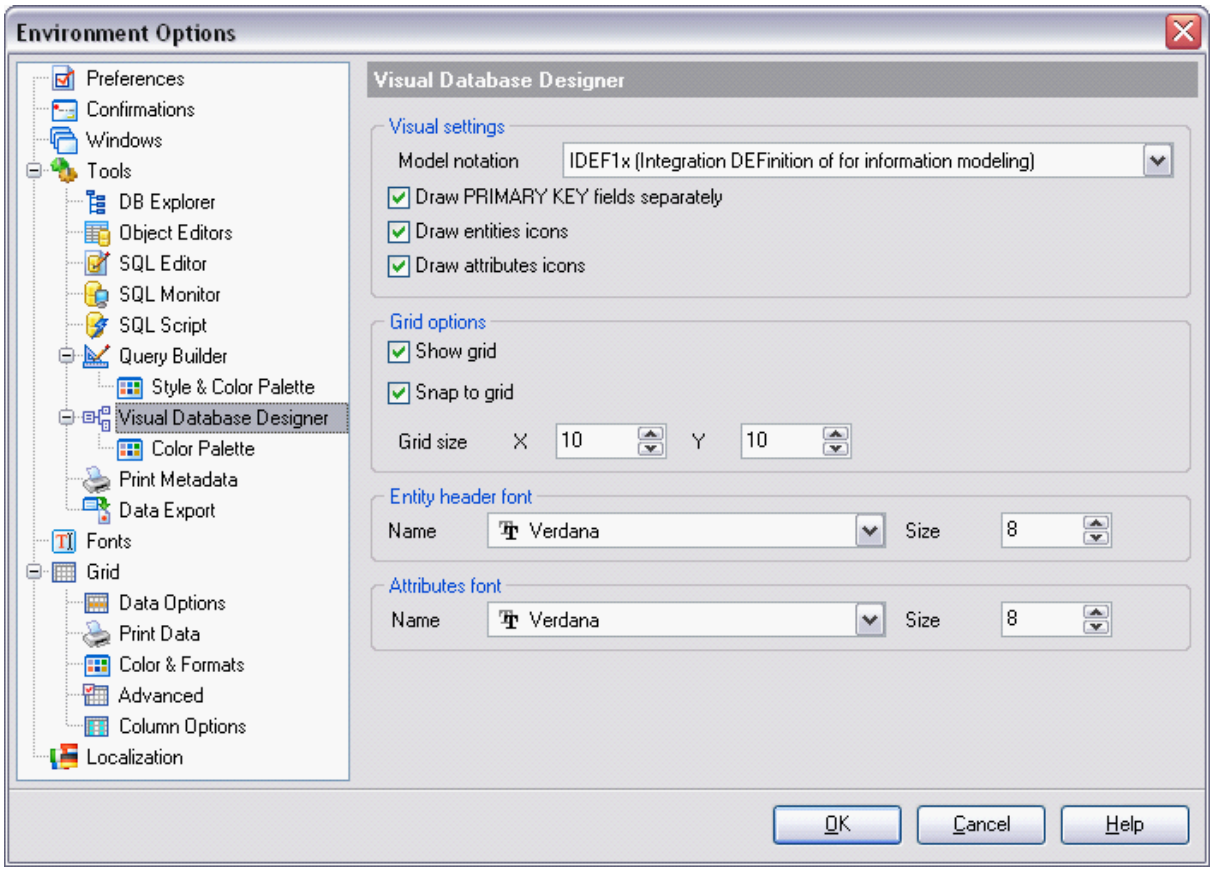
Automatically aligns entities on the form with the nearest gridline. You cannot place an entity in between gridlines.

Grid size
Sets grid spacing in pixels along the x- and y-axes. Specify a higher number to increase grid spacing.

Entity header font
Select a font type and size to dislpay entity headers.

Attributes font
Select a font type and size to dislpay attributes.

You can set color for all database designer diagram objects by using Color Palette.



12.1.4.7.1 Color Palette

Color Palette page
These options define colors of different Visual Database Designer elements: work area, table captions, field area, etc. Click an item to select a color for the appropriate Database Designer element.

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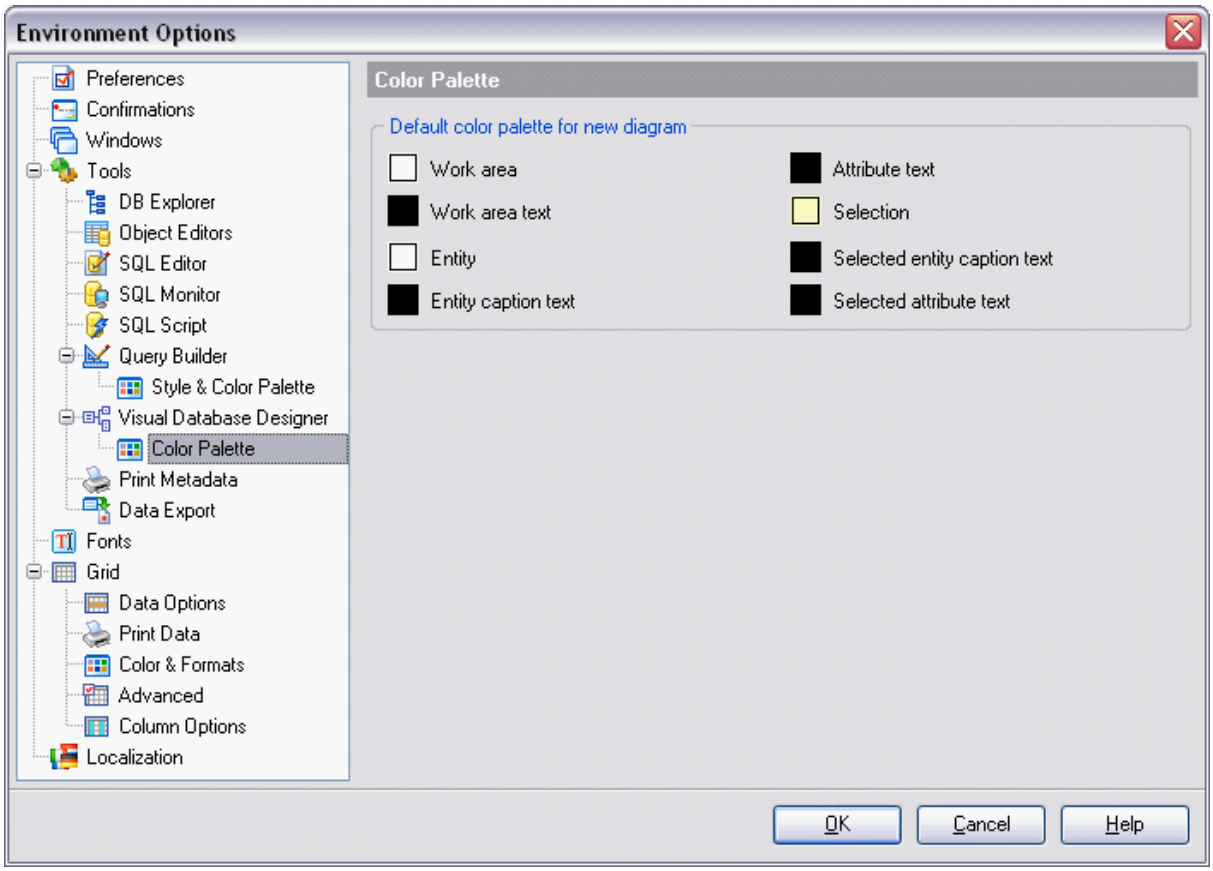

12.1.4.8 Print Metadata

Default Paper Size
Defines the default paper size for the reports created with the Print Metadata tool.

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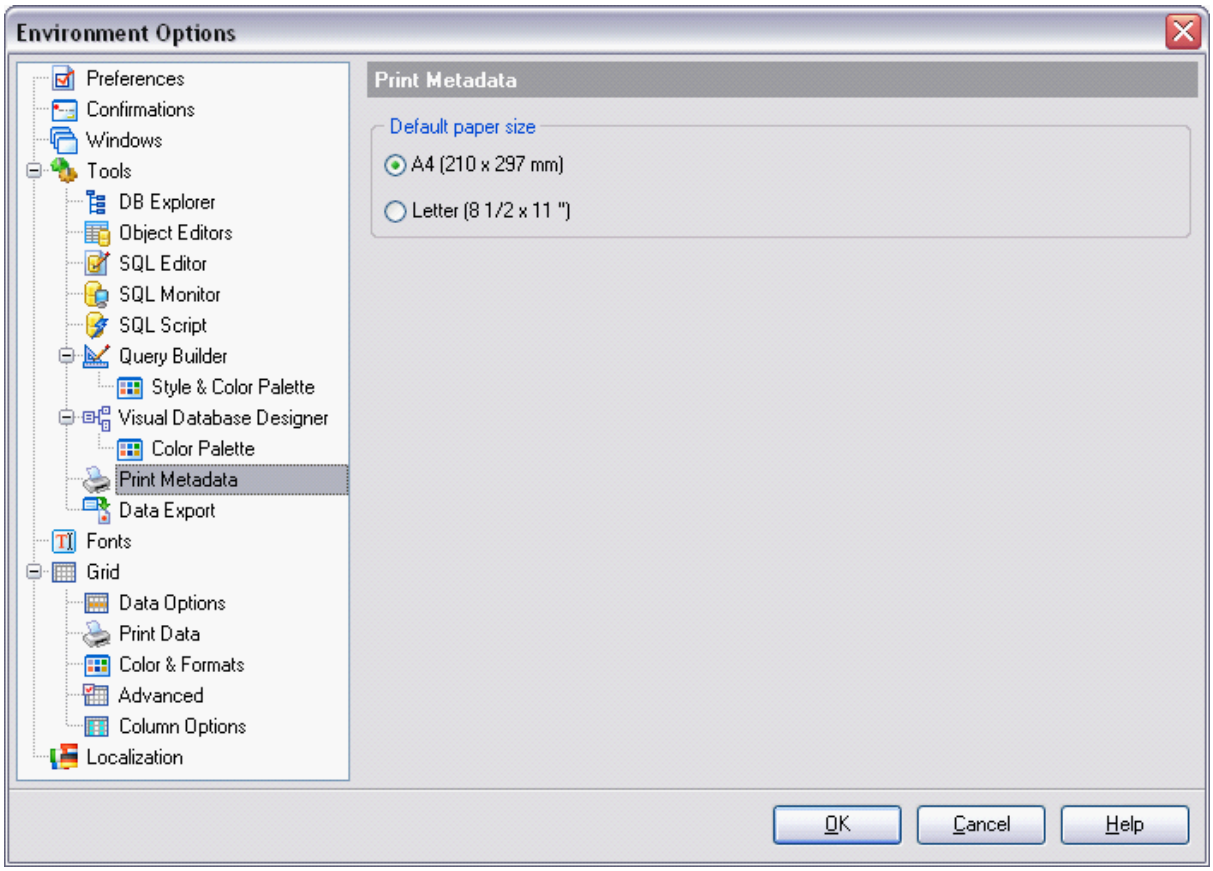

12.1.4.9 Data Export

This page allows you to customize formats applied to exported data. Edit the format masks to adjust the result format in the way you need.

Fore more details see Adjusting Data Formats

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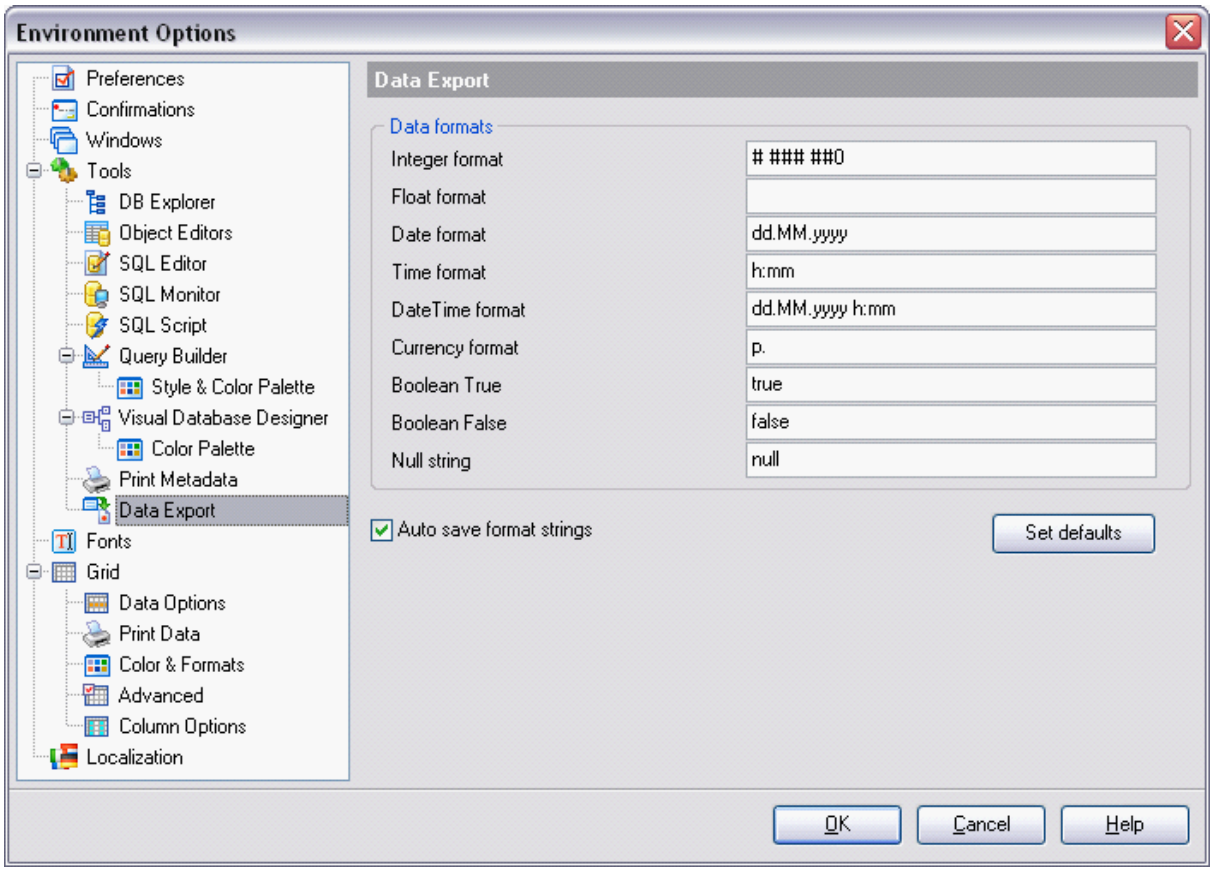

12.1.5 Fonts

System font name
Defines the font name used by SQL Manager 2007 for Oracle.

System font size
Defines the font size used by SQL Manager 2007 for Oracle.

The box below displays the sample text using the selected font.

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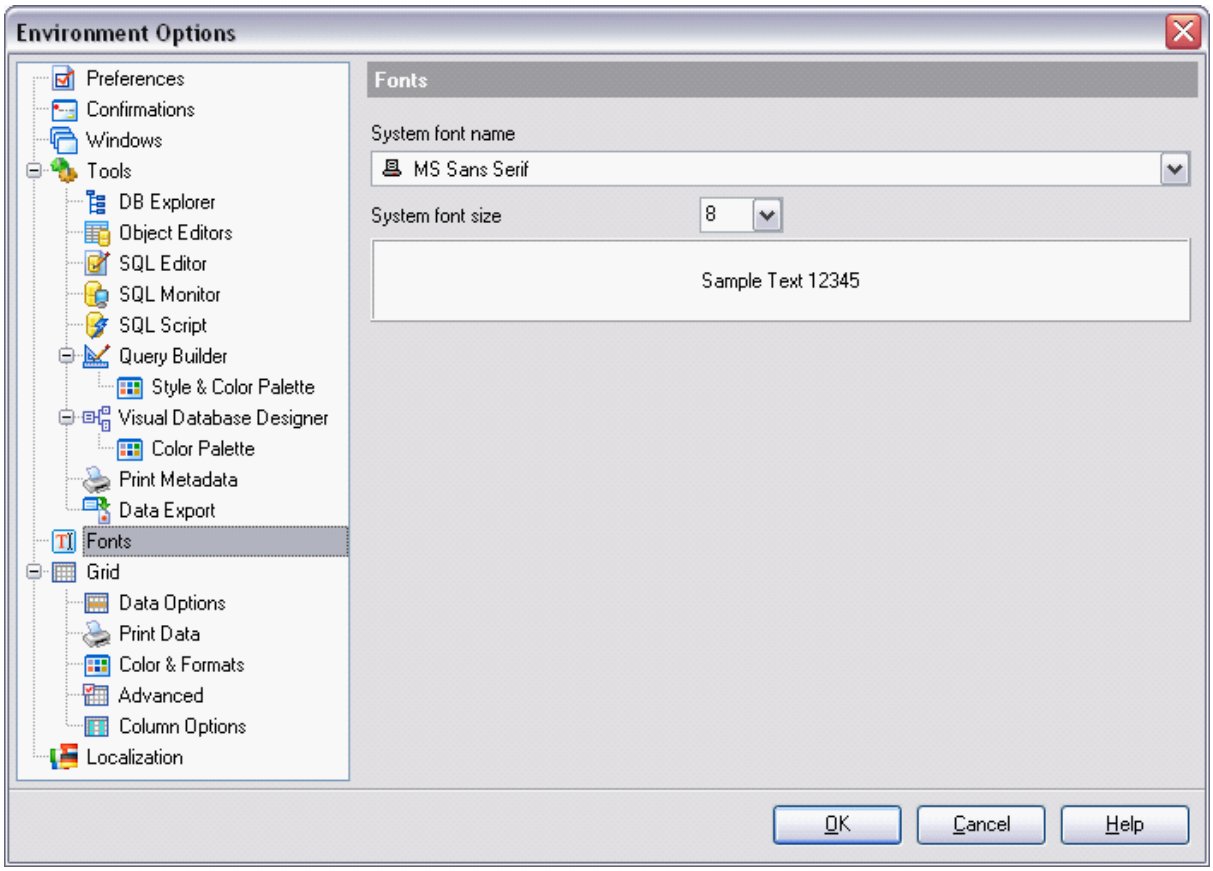

12.1.6 Grid

General options

Striped Grids
Displays the odd grid rows in a different color, defined by the **Stripy** option.

Show editor immediately
Allows editing the cell value right after the cell is clicked.

Always show editor
Set this option to make the cell editors always active.

Enable auto-search in grid
Set this option to enable start typing and have the grid automatically navigate to the closest match.

Row multi-selection
With this option set, multiple rows can be selected.

Column auto-width
With this option set, column widths are changed in order to display all columns without

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using the horizontal scrollbar. If a column's content is still too large to display without the grid needing to resize, then the column's values are truncated and the hidden characters are replaced with an end ellipsis.

Cell auto-height
If the widths of the columns are insufficient to display the full content, then text clipping occurs. Set this option to prevent this. If this option is set, the cell content is displayed in multiple lines where necessary. You can set the number of lines to display using **Cell max line count** option.

Grid layout preference

Select **Save and restore layout** option to keep the original grid width. Select **Autofit column widths** option to shrink the grid columns so that the longest visible column value fits.

Root level options

These options are applied to the main view of the grid. See Grid View for details.

Detail level options

These options are applied to the detail view of the grid. See Grid View for details.

Show "Group by" box
Displays a box above the column captions allowing to group data in the grid.

Show indicator
Displays the row indicator.

Show navigator
Activates/deactivates the data navigator. This navigator is displayed at the bottom of a view.

Show "New item row"
Displays an empty row at the top of a view, which is a convenient way for adding data to the grid.

Hide tabs for single detail
This option is actual when only one view is present on detail level. When checked, it hides the view tab.

See also:
Data Frame

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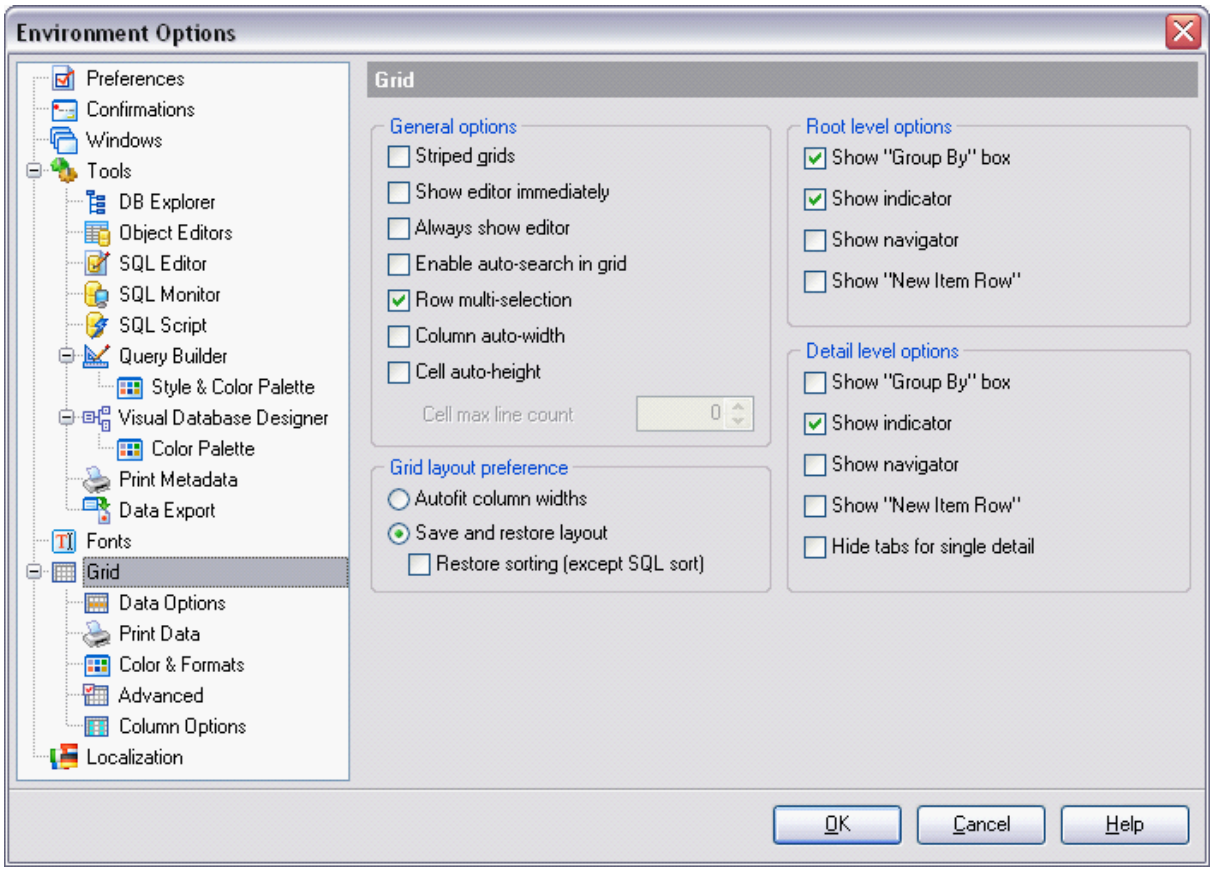

12.1.6.1 Data Options

Default Grid Mode

- **Load all rows**
  The grid loads all records from a dataset. This option increases the grid performance by reloading only changed dataset records when updating. In this mode all features (automatic sorting, filtering and summary calculations) are available.
- **Load visible rows**
  The grid loads only a fixed number of dataset records into memory. This option minimizes dataset loading time. The automatic sorting, filtering, summary calculations are not supported in this mode.

Default Grid Mode defines grid mode which will be used by default.
With the **Load all rows** option enabled, when loading data, all the records are loaded into grid buffers. In this mode opening the tables with many records may take a very long time. But in this case you have some advantages: e.g. in the filter drop-down list the column headers are displayed with the values for quick filter; it is possible to open several sublevels at the same time when viewing data in master-detail view, etc.
Because opening and other operations with an object consisting of many records takes sufficient time the **Load visible rows** mode should be used instead. It can be set individually for each table and is saved between sessions (can be set via grid context menu).

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Advanced

Use shared connection for each data view within a database
Uncheck this option to use separate connection for each data view within a database.

Use SQL sorting in data view
The data view will be ordered using SQL sort.

Use SQL filter in data view of Table and View Editors
The data view will be ordered using SQL filter.

With the **Use SQL Sorting in data view** option enabled a click on the column header for sorting causes reloading all table data with the selected field in ORDER BY expression of the SELECT statement. Otherwise the sorting is performed by means of grid. If the table consists of huge number of records and the **Select only XXX records** mode (Limit options in table and view editors) is used this mode is more preferable (e.g. all the records which field values start with "A" will be displayed, and not those which were in originally opened XXX records.
All above-mentioned is related to the **Use SQL filter in data view** option. If the filter is applied to the tables consisting of many records it is strongly recommended to enable this option. After enabling it the filter will be applied to all table records, not only to those which are displayed at the present moment.

Load visible rows mode if records more than
Set this option to switch to load visible rows mode when number of records in dataset exceeds specified number.

String fields width (chars)
Using this option you can limit string fields width that may improve performance on large datasets.

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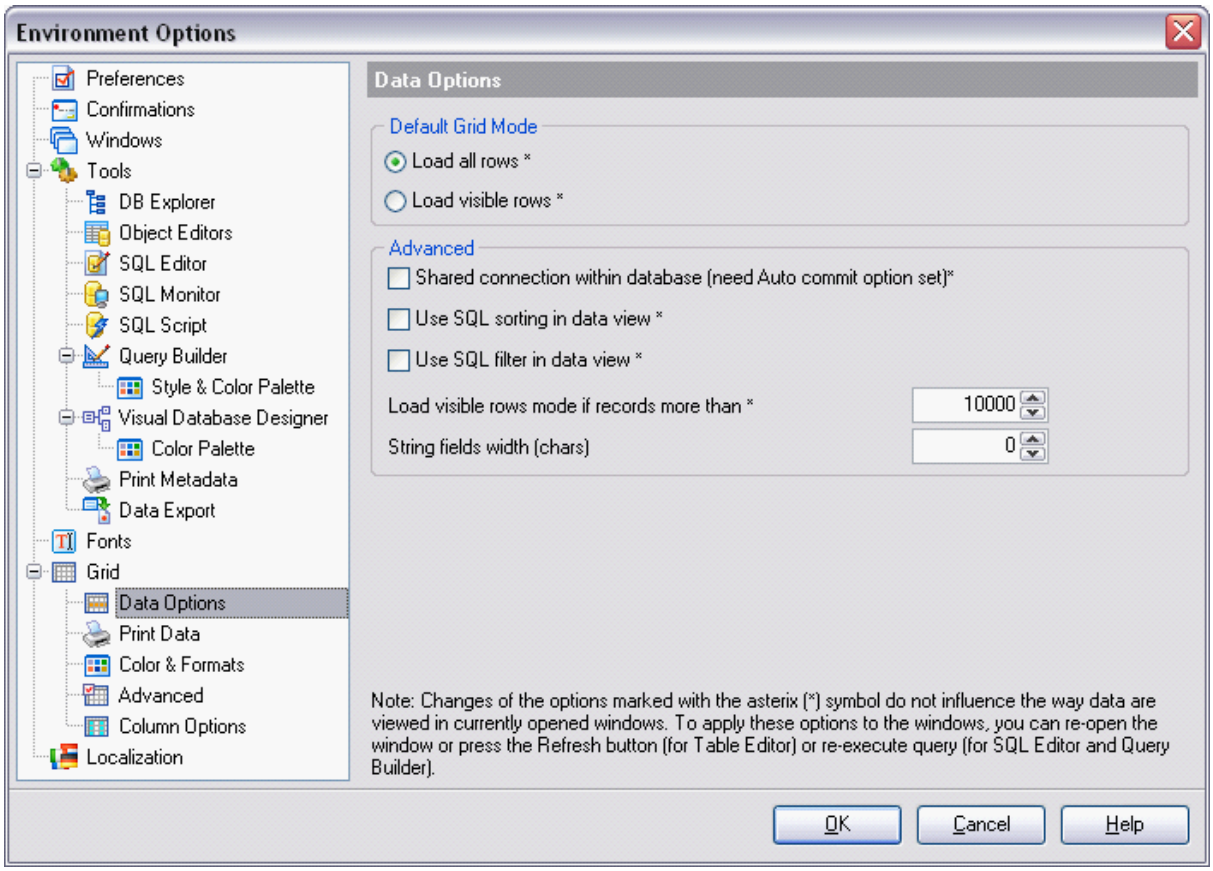

12.1.6.2 Print Data

Save/restore following print data properties
These options specify which Print Data properties will be saved between work sessions (e.g. if you tick off the Page settings item, those the settings will be saved and stored between sessions).

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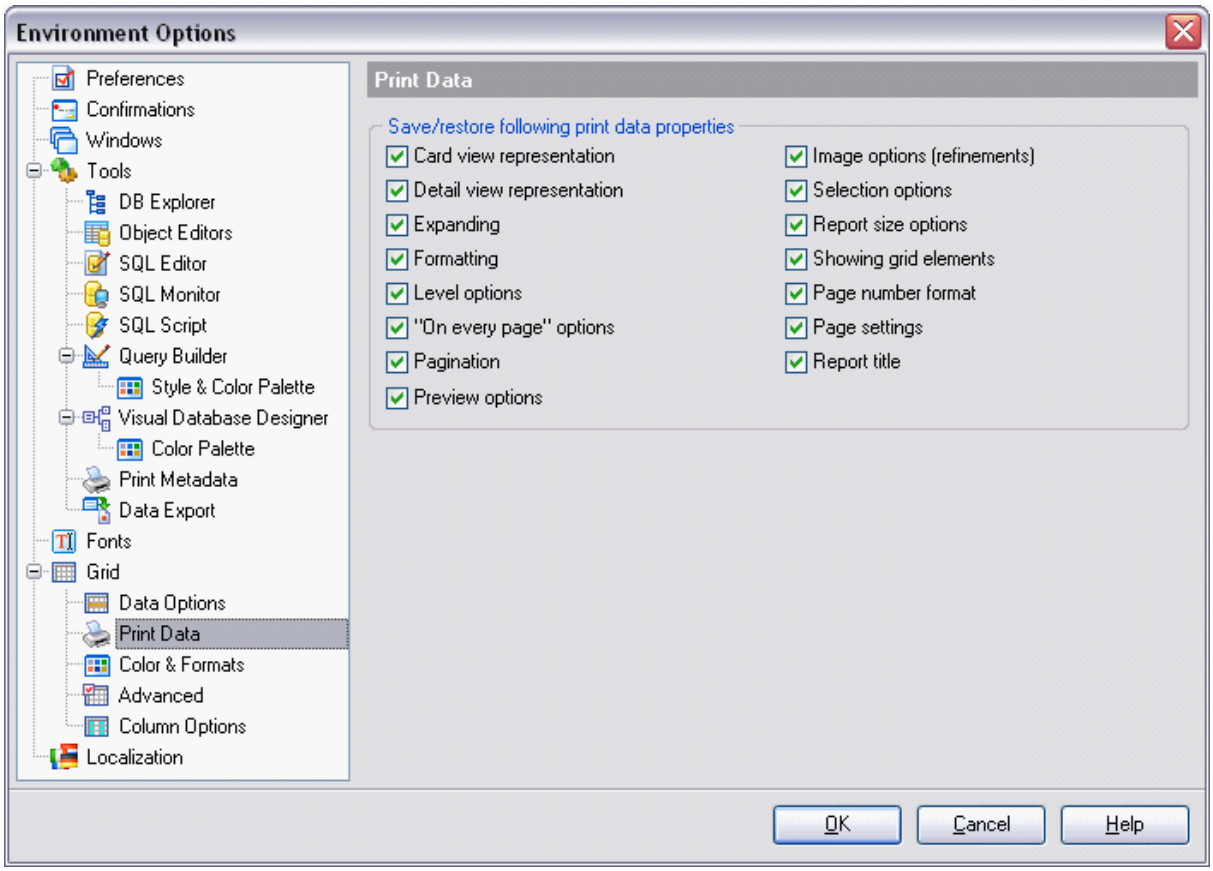


12.1.6.3 Color & Formats

Display formats

Integer fields
Defines the format for displaying TINYINT, SMALLINT, MEDIUMINT, INTEGER, and BIGINT fields.

Float fields
Defines the format for displaying FLOAT, DOUBLE and DECIMAL fields.

Datetime fields
Defines the format for displaying DATETIME fields.

Date fields
Defines the format for displaying DATE fields.

Time fields
Defines the format for displaying TIME fields.

Colors

Grid
Defines the background color of the data grid.

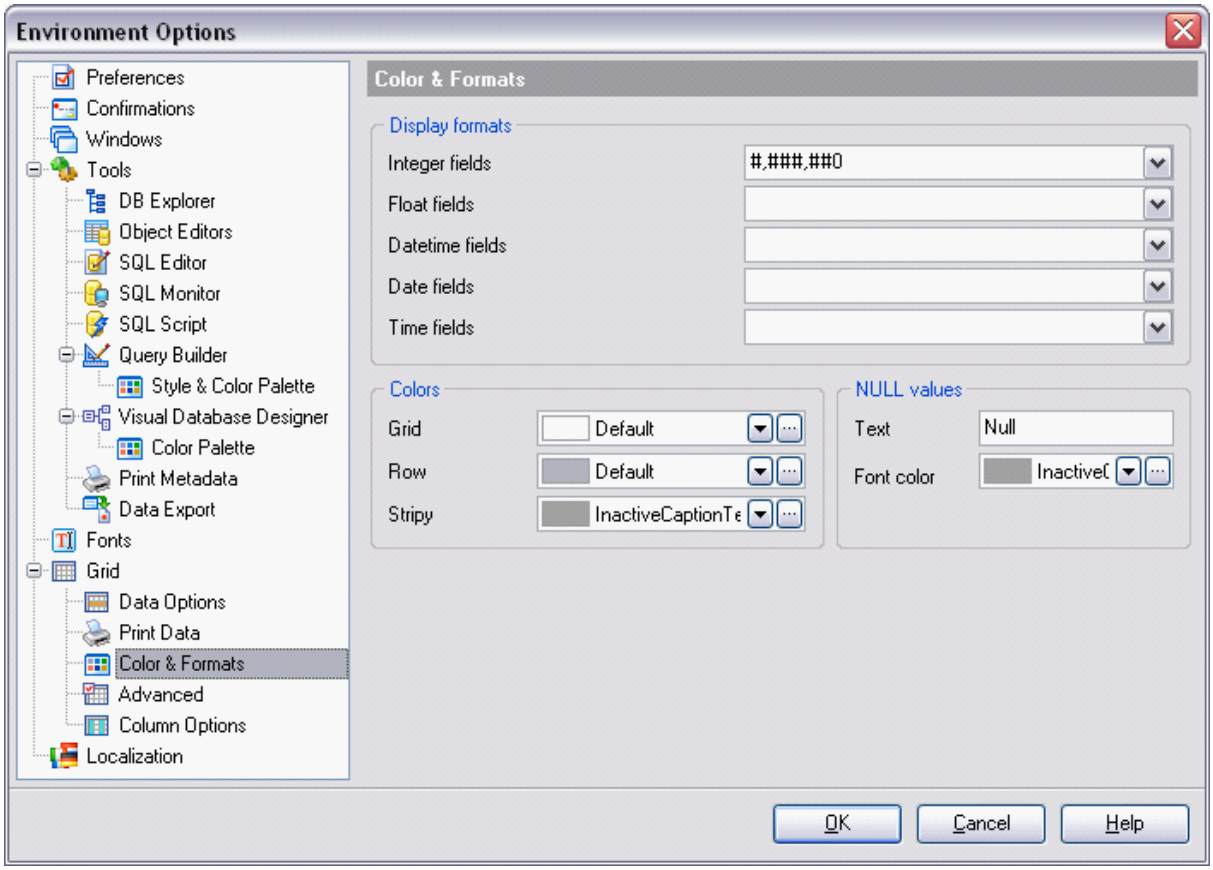
Row
Defines the color of the selected row in the data grid.

Stripy
Defines the color of the odd rows if the **Stripy Grids** option is on.

Null Values

Text
Defines the text that stands for the NULL value.

Font Color
Defines the font color displaying NULL values in the grid.



12.1.6.4 Advanced

Invert selection
Determines whether a single cell within the focused row or the whole row is highlighted when focused.

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Cell hints for clipped text
Indicates whether a hint box is displayed when hovering over a cell containing clipped text.

Focus cell on cycle
Determines whether the focus moves to the next row after it reaches the right-most cell within the current row.

Focus first cell on new record
Determines whether the focus moves to the first cell of a newly created row.

Next cell on pressing Enter
Determines whether the current view columns can be navigated by using the Enter key.

Show navigation hints
Indicates whether a hint box is displayed when hovering over navigator buttons.

MRU list in column filter
Enables showing of Most Recently Used items when filtering columns

Expand buttons for empty details
Specifies whether to display expand buttons within master rows that don't have associated details.

Card width
Defines the width of the card used in Card View mode.

Large Memo Editor
Sets number of lines for text-typed fields when viewing data in Form view.

Word wrap in memo editor
Determines whether long strings are wrapped within a memo editor.

Grid lines
Determines whether to display vertical and horizontal lines between cells.

Show edit buttons
Indicates whether an edit button is displayed.

Detail tabs position
Specifies position of the tabs on detail level views.

Card layout direction
Specifies the direction of cards in Card View mode.

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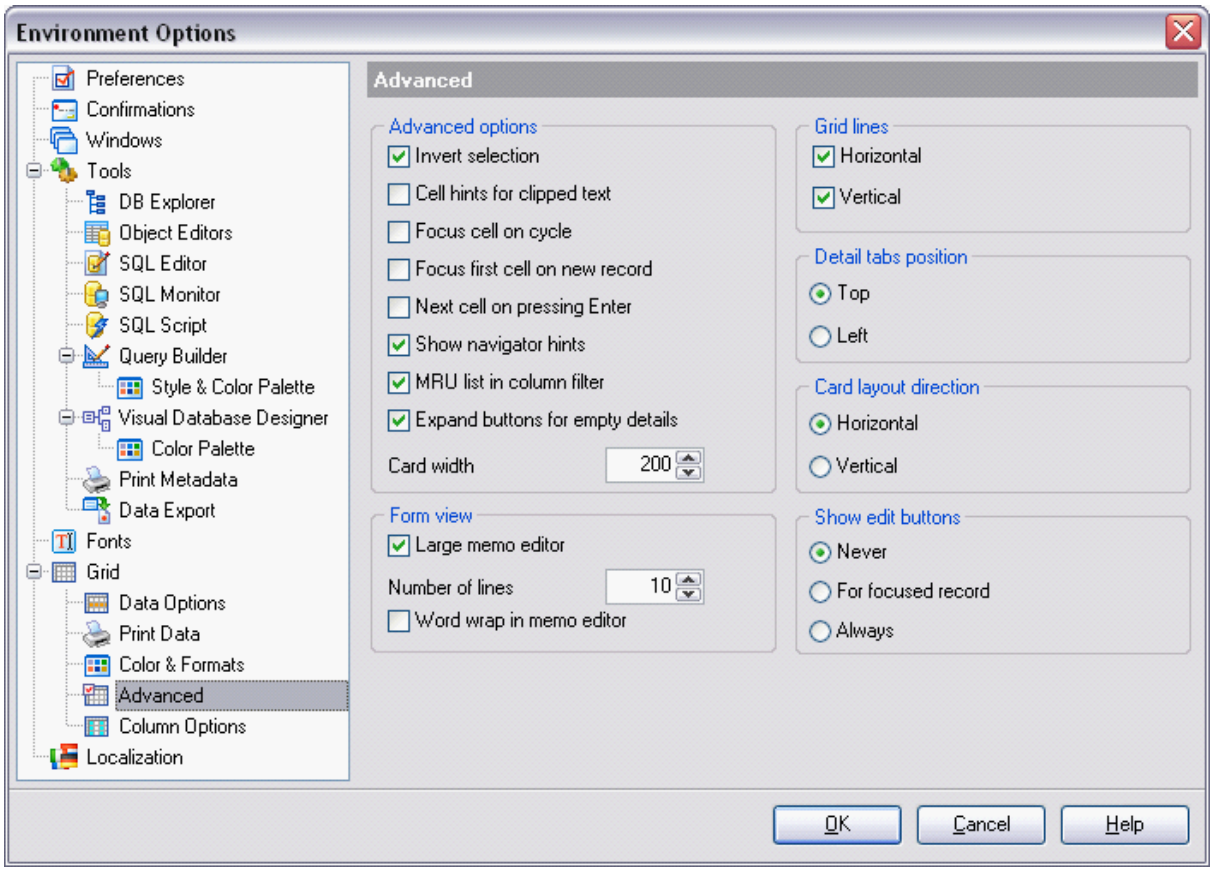

12.1.6.5 Column Options

Auto-select text
Determines whether all text within an editor is automatically selected when the editor gets focus.

Hide selection on losing focus
Determines whether the visual indication of the selected text remains when the editor loses focus.

Inserting Return characters
Specifies whether a user can insert return characters into text.

Inserting Tab characters
Specifies whether a user can insert tab characters into text.

Word wrap
Determines whether long strings are wrapped within a memo editor.

Popup memo editors
Turns on popup memo editors for text BLOB type fields.

Use Ctrl+Up instead of Up to increase spin values
Allows you to use *Ctrl*+Up and *Ctrl*+Down key combinations for editing the spin values (integer field values).

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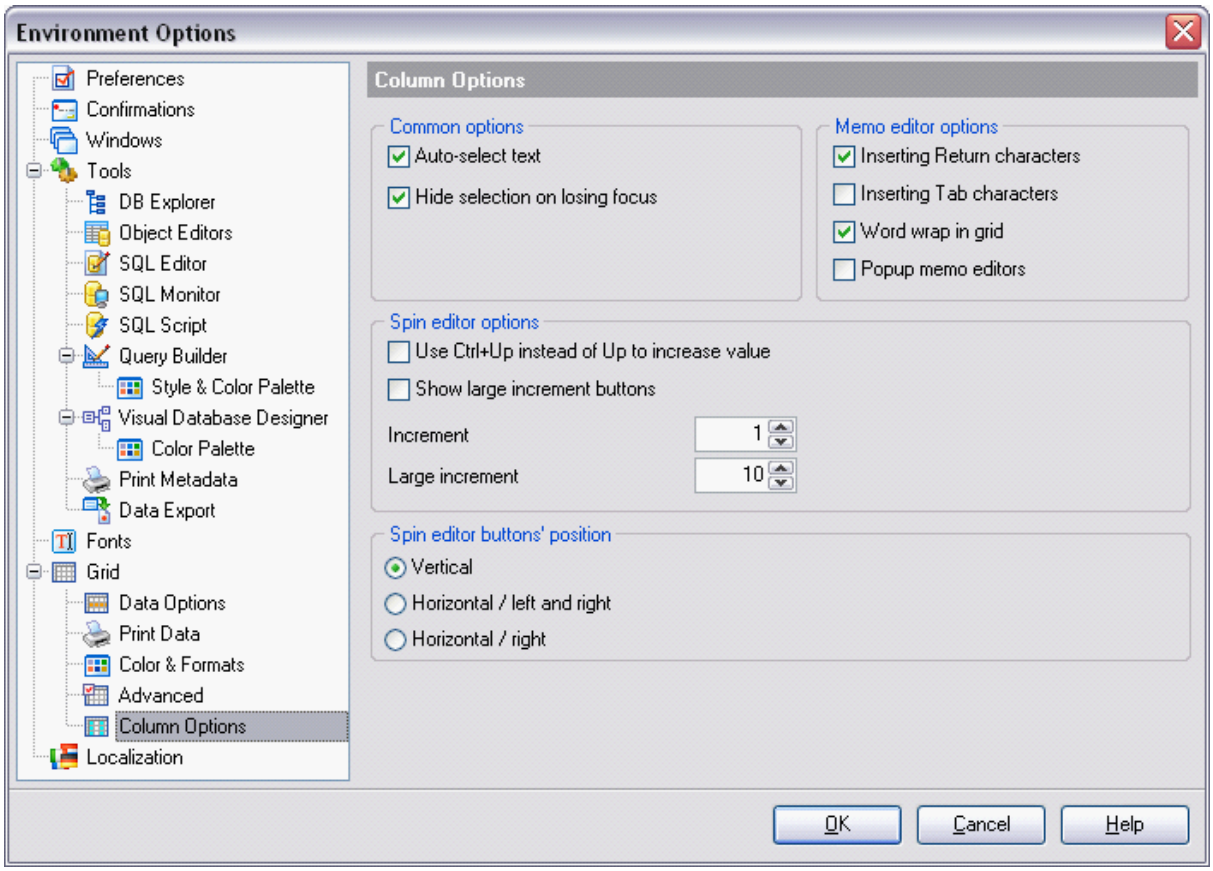
Show large increment buttons
Determines whether fast buttons are visible within an editor.

Increment
Specifies the increment value for a spin editor.

Large increment
Specifies the fast increment value for the spin editor.

Spin editors buttons' position
Specifies the position of spin editor buttons.



12.1.7 Localization

The **Localization** page is provided for managing the SQL Manager 2007 for Oracle localization files.

You can create your own *.lng files similar to those, available at the $(SQL Manager 2007 for Oracle)\Languages folder, add them to the list of available languages on this tab and set the new language as a program interface language.

Auto scan languages on startup
When checked, the directory with localization files will be scanned automatically on program startup; all the languages found will be added into the list of available languages.

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Default directory
The default directory for adding the new *.lng files.

Choose program language
Selects the program interface language.

Available languages
Lists all the languages available for localization and the corresponding *.lng files. Double-click a language in the list to edit its name or *.lng file.

Add defaults
Searches in the **Default directory** folder for the *.lng files and adds all them to the list.

Add
Opens the Language Editor dialog for adding a new language file.

Edit
Opens the Language Editor dialog for changing the name or the corresponding *.lng file of the language selected in the **Available languages** list box.

Delete
Removes the language selected in the **Available languages** list box.

See also:
Localizing SQL Server Manager

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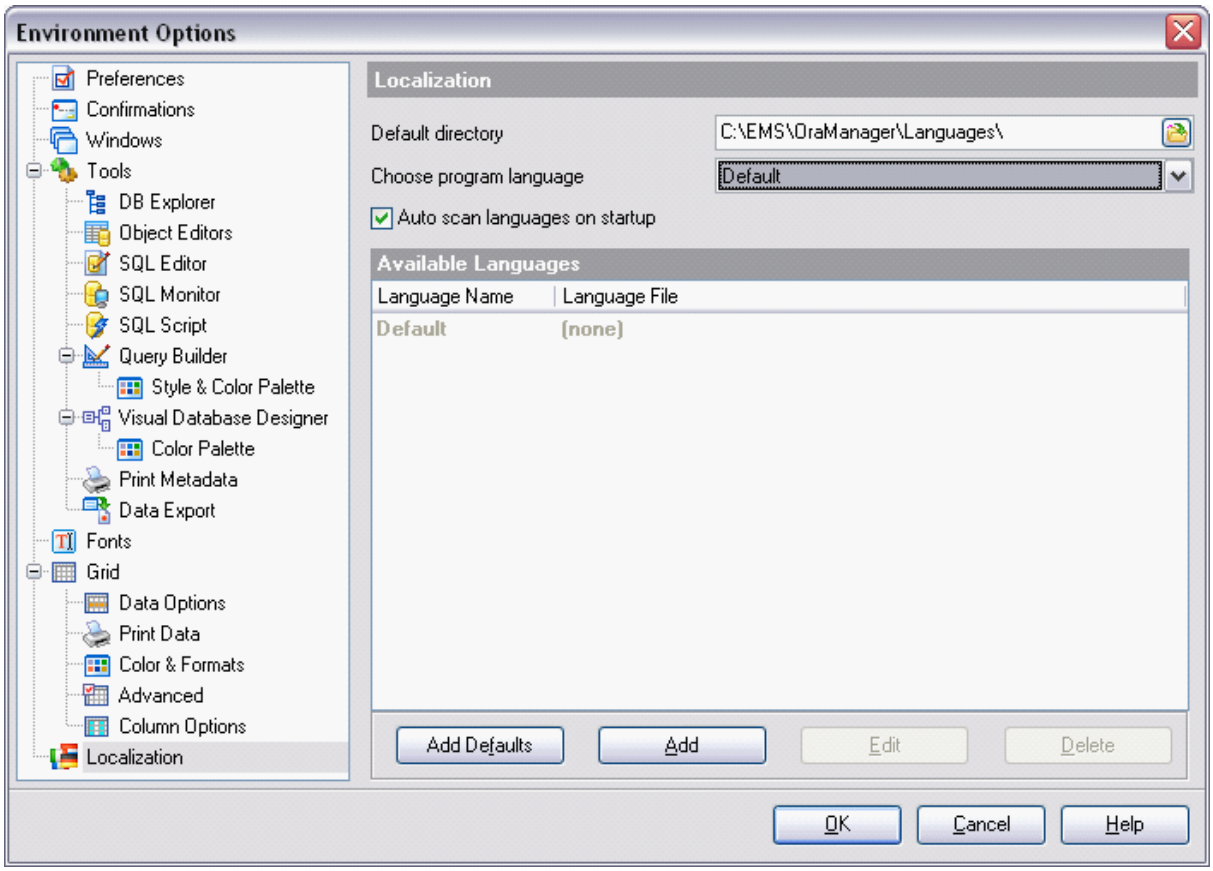

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12.2 Editor Options

Editor Options allow you to set the parameters of viewing and editing the SQL statements within SQL Manager 2007 for Oracle. To open the **Editor Options** window select the **Options | Editor Options** menu item.

- General
- Display
- Color
- Quick Code
- SQL Formatter
- Key Mapping

12.2.1 General

Auto indent
If this option is checked, each new indention is the same as the previous when editing SQL text.

Insert mode
If this option is checked, insert symbols mode is on by default.

Use syntax highlight
Enables syntax highlight in the object editor window.

Find text at cursor
If this option is checked, the **Text to find** field in the Find Text Dialog window is automatically filled with the text on which cursor is set.

Always show hyperlinks
If this option is checked, hyperlinks are displayed in the editor window. To open a link, click it with the *Ctrl* button pressed.

Show line numbers
If this option is checked, line numbers are displayed in the SQL text editor window.

Trim trailing spaces
If this option is checked, all spaces after the last symbol in line will be trimmed.

Use smart tabs
If this option is checked, tab length will be variable. After pressing a Tab button the cursor aligns with the nearest first or last position of another line.

Take from previous line only
Tab length will be variable. After pressing a Tab button the cursor aligns with the first or last position of the previous line.

Convert Tab characters to spaces
If this option is checked, Tab symbol is replaced by the "spaces".

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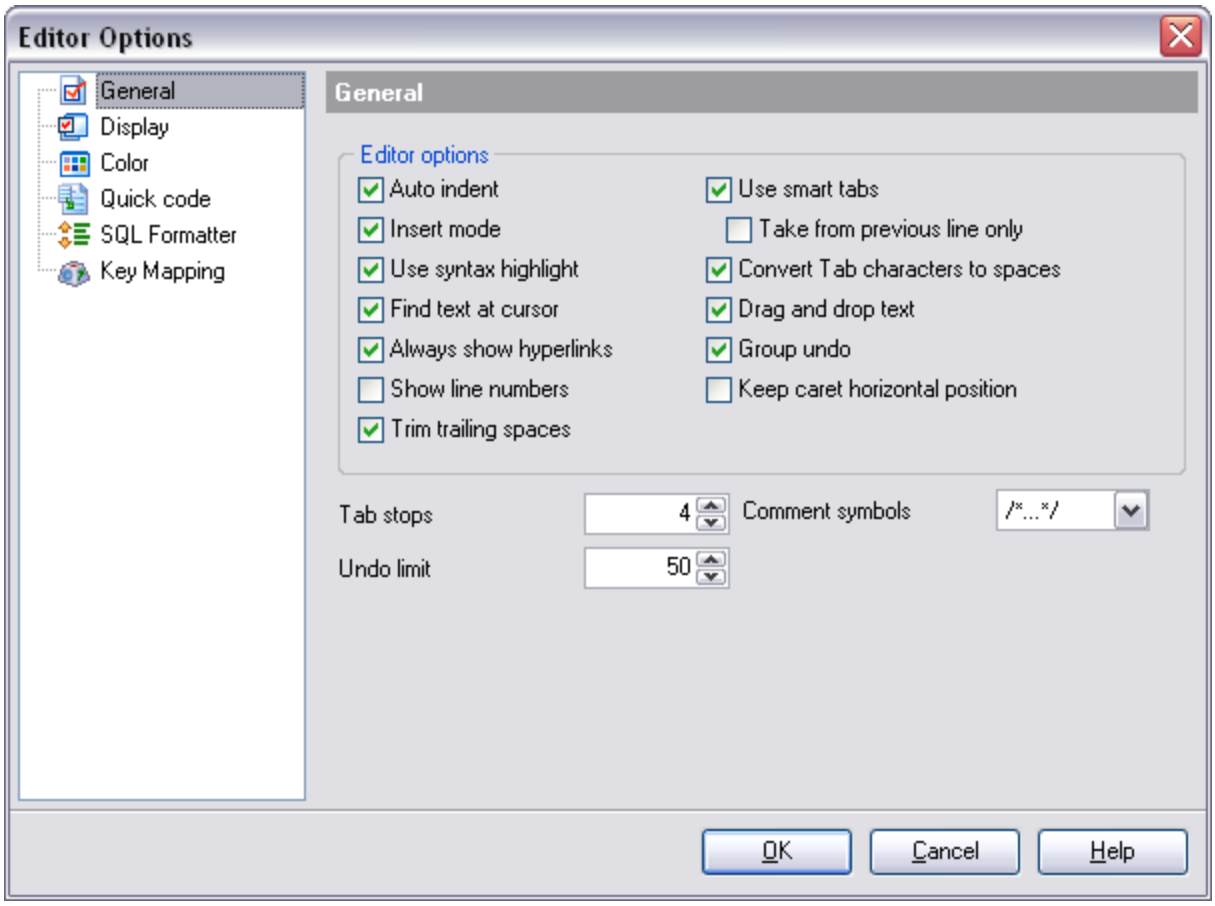
Drag and drop text
This option allows to drag and drop selected text.

Group undo
This option allows you to undo multiple actions of the same kind.

Keep caret horizontal position
If this option is checked, the horizontal position of a cursor is kept. If you move a cursor (by Up and Down arrows) on a line, which length is less than current cursor horizontal position, it will be positioned after the last symbol of a line.

Tab stops
Defines the tab length, used when editing a text.

Undo limit
Defines the maximum number of changes possible to be undone.



12.2.2 Display

Visible right margin
Makes the right text margin visible.

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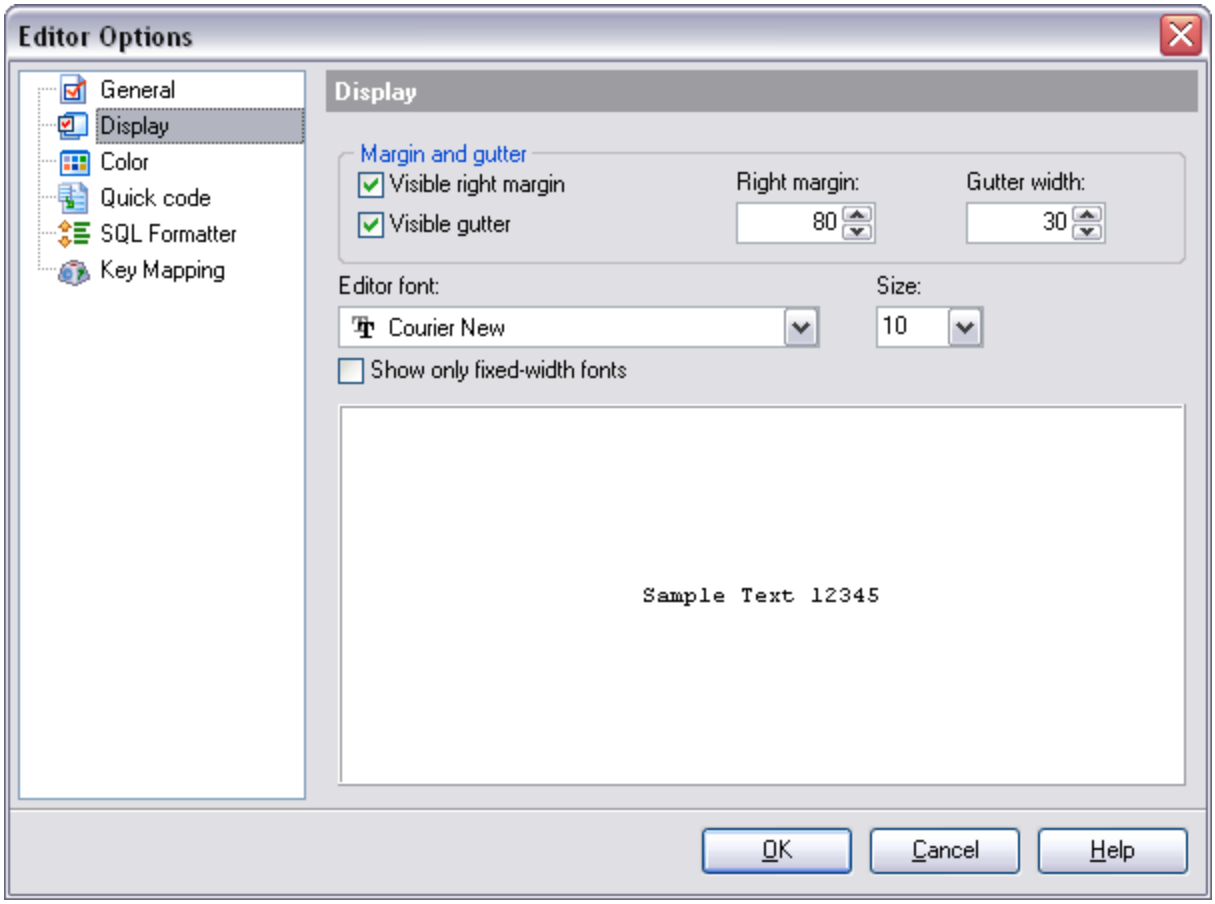
Visible gutter
Makes the gutter visible in the editor window.

Right margin
Defines the position of the right text margin in the editor window.

Gutter width
Defines the gutter width in the editor window.

Editor font, Size
Use these options to set the editor font and its size. If the **Show only fixed-width fonts** option is checked, only fonts with the fixed width are displayed in **Editor font** dropdown list.



12.2.3 Color

On **Color** tab you can specify font and background colors and attributes of the text, editor uses to mark out different text fragments: default, comments, strings, SQL keywords, numbers, links, wrong symbols, identifiers, symbols, and selected text. Set the foreground and background colors for different elements in the corresponding boxes.

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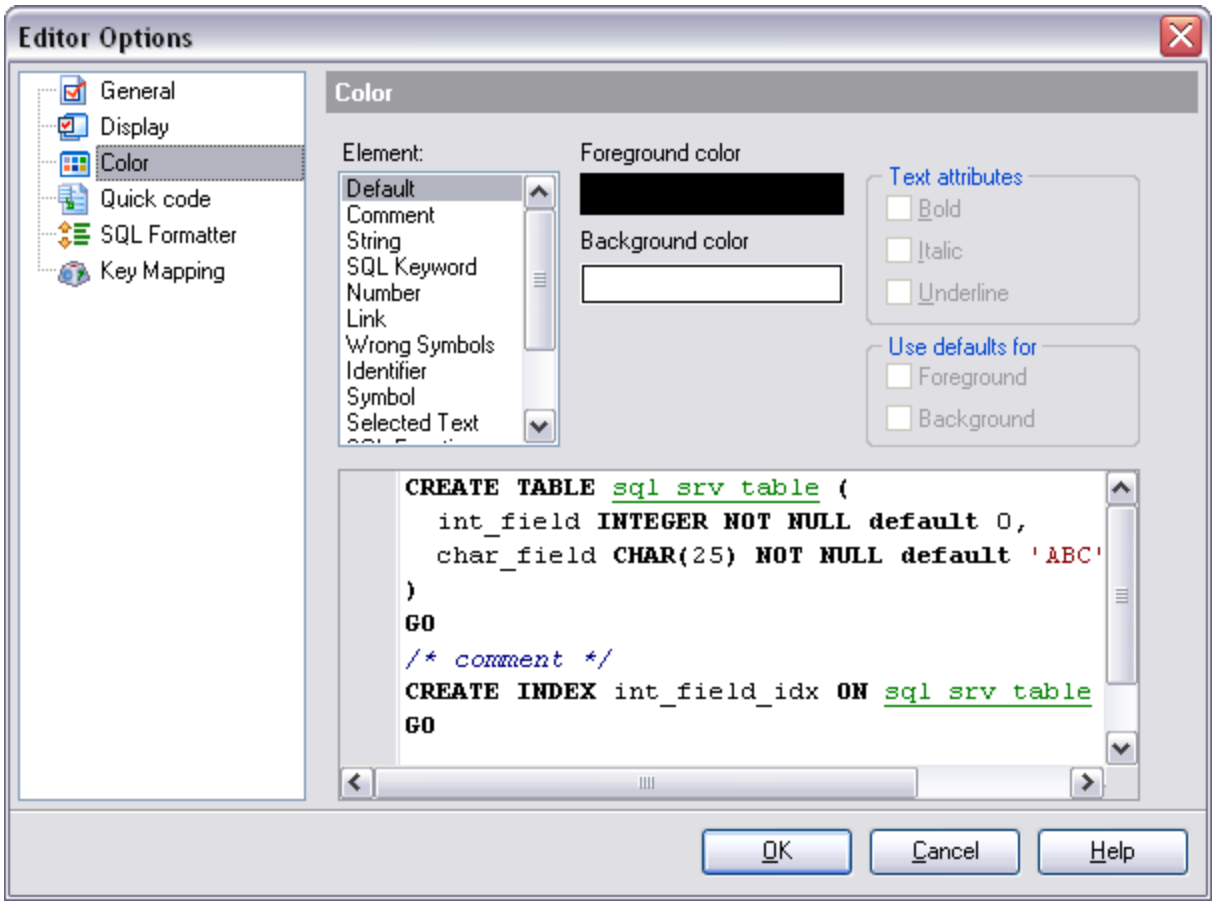

12.2.4 Quick Code

Code completion
If this option is checked then on typing the first word symbols in the SQL text editor you will be offered some variants for the word completion in a popup list (analogue of the **Code Insight** in **Delphi IDE**). The popup list will appear a period of time, defined by **Delay** option.

Code parameters
If this option is checked, the Delphi-like hint for functions is enabled.

Delay
Using this option you can change the time the popup list takes to appear.

Code case
Allows you to change the case of the words inserted automatically.

Auto launch keyboard templates
Allows you to use keyboard templates for faster typing frequently met expressions (see Keyboard Templates).

Color scope categories
If this option is checked, object types will differ in color in the popup menu.

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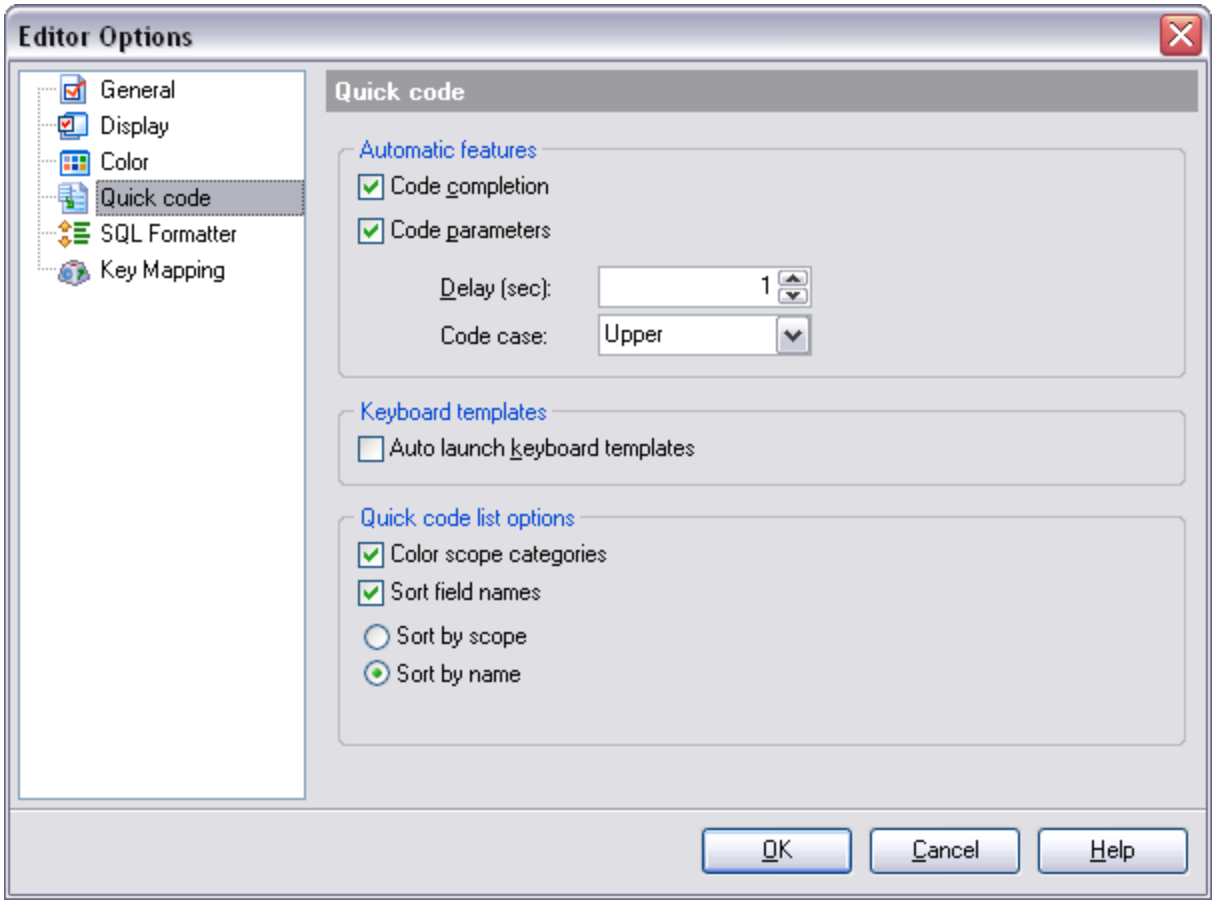
Sort by scope / Sort by name
Switches sorting objects in the popup menu by name or by type (Table, Function, etc.).



12.2.5 SQL Formatter

SQL Formatter is a new feature added to SQL Editor. It is a useful tool for formatting SQL queries, making SQL statements easy to read.

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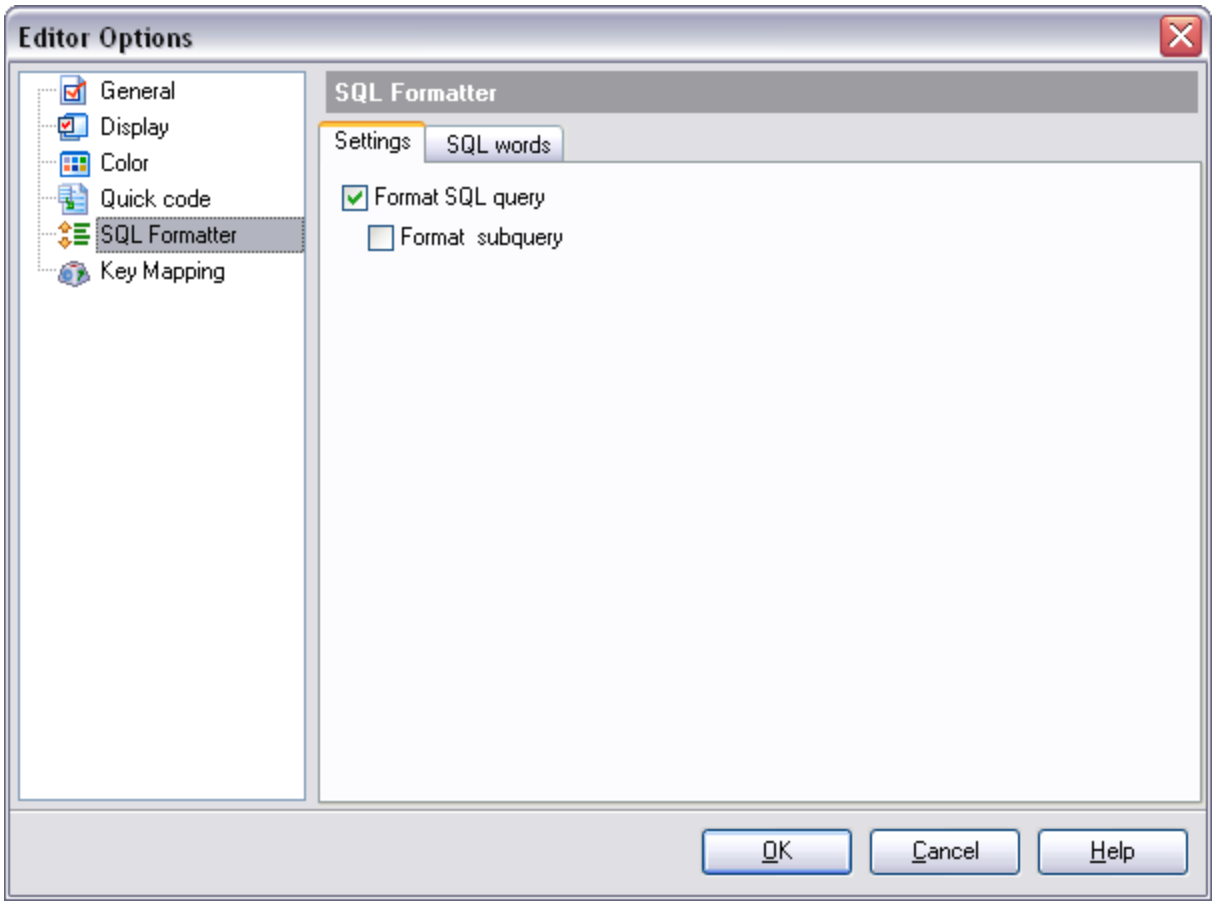

12.2.5.1 Settings

Format SQL query
Turns on SQL formatting, making the SQL statements easier to read.

Format subquery
Allows to format subqueries

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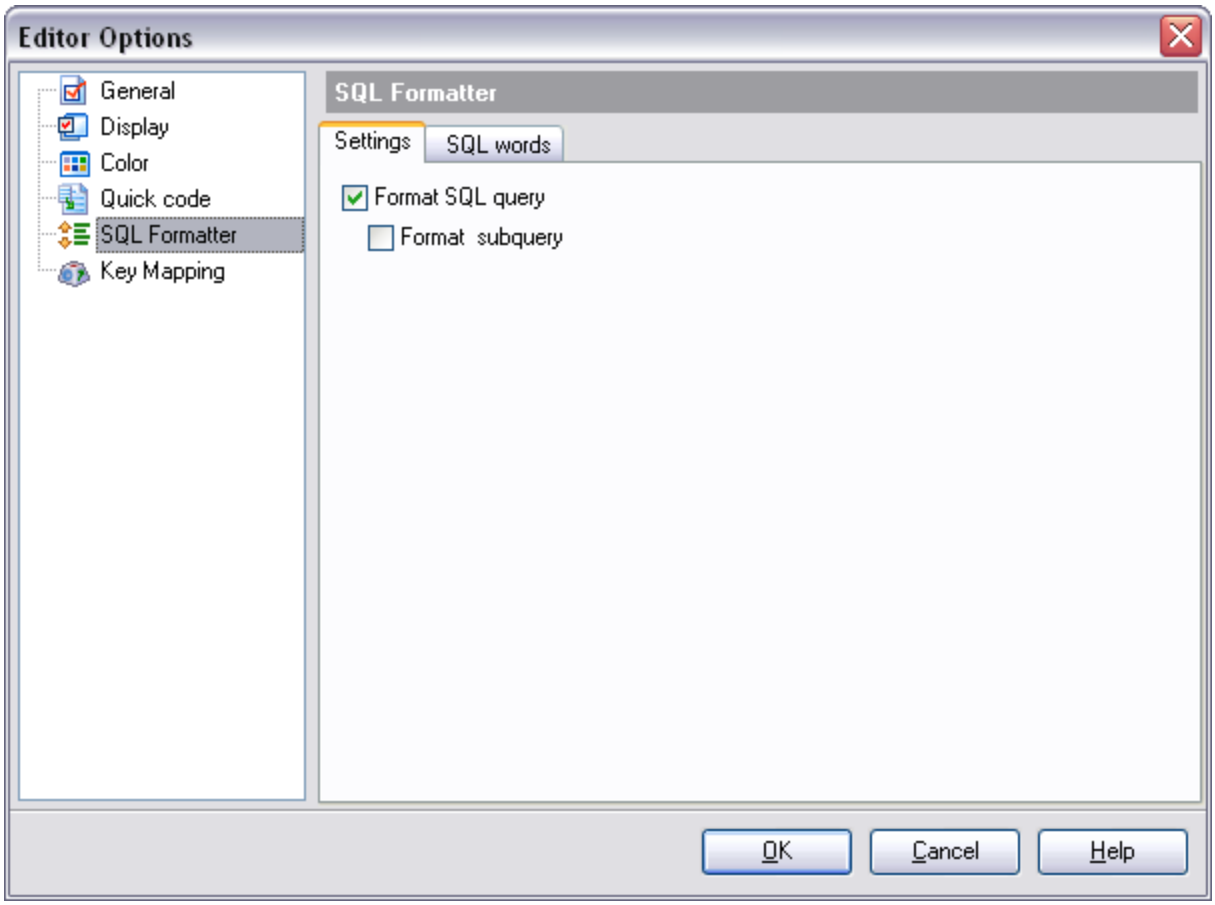

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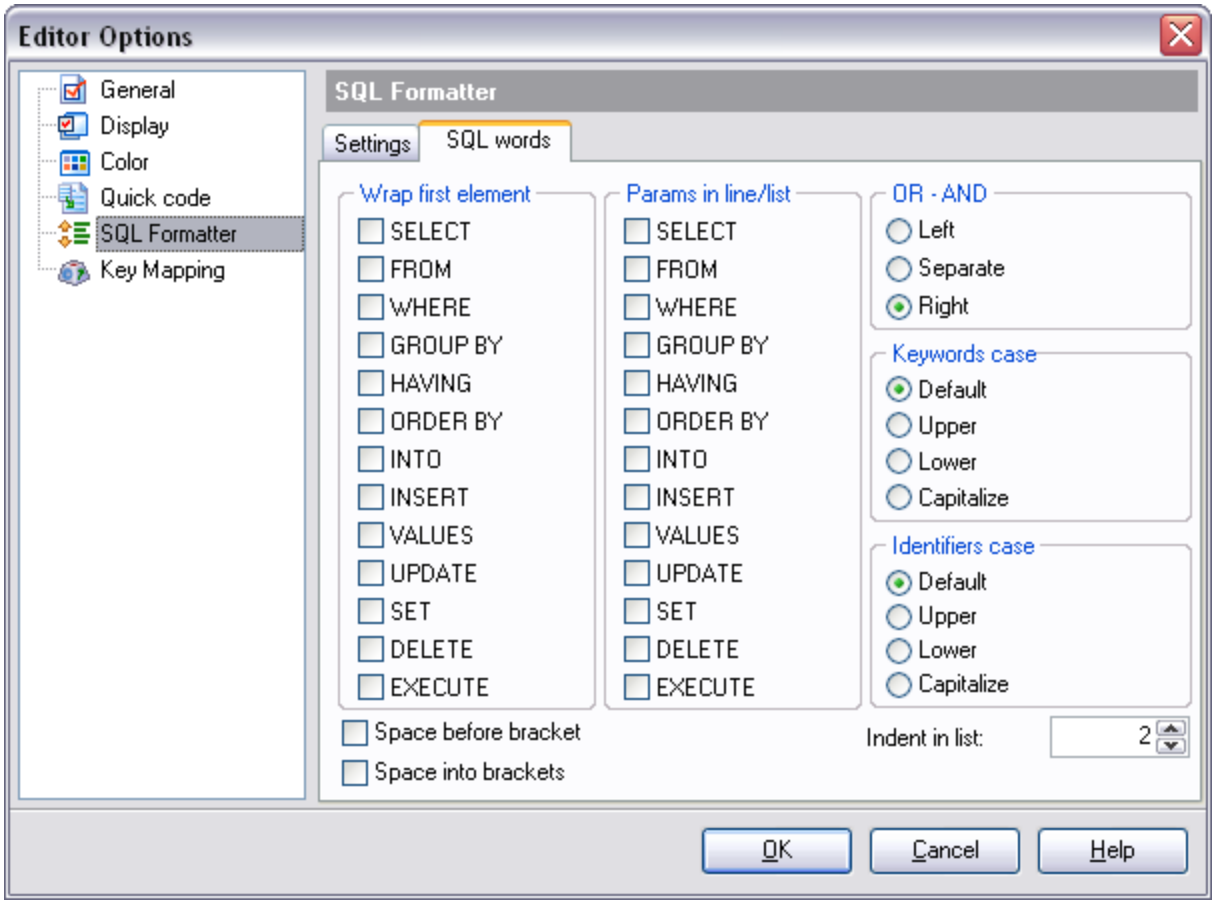
12.2.5.2 SQL Words



Wrap first element
Wraps the selected text at a specific column.
Select the key words after which formatting should be applied.

Params in line/list
Allows you to display the parameters followed by the key words (specify them below) in list or in line.

OR - AND
Set the placement of the AND an OR operations according to the operands followed by them. See the example below.

Left

```
WHERE
        AND ...
        AND ...
        AND ...
```

Separate

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```
WHERE
        ...
         AND
        ...
         AND
```

Right

```
WHERE
        ... AND
        ... AND
        ... AND
```

The **Keywords case** and **Identifiers case** options allow you to define the case of the corresponding items.
You may choose **UPPER**, **lower**, **Capitalize**.
Default case means leaving the name of the identifier or a keyword "AS IS".

Space before bracket
Adds a "space" symbol before the opening bracket and after the closing one.

Space into brackets
Adds a "space" symbol after the opening bracket and before the closing one.

Indents in list
Sets the size of indent relative to the previous string.

12.2.6 Key Mapping

For your convenience SQL Manager 2007 for Oracle provides key mapping. On this tab you can set the shortcuts for various commands/operations according to your needs.

Select the command for which you want to make a shortcut from **Commands** the list on the right, then place cursor into the **Key** editor and press key combination you find useful (use *Ctrl Alt Shift* buttons). After setting the shortcut, press **New** button to add it into the list of existing **Key combinations**.

Note: you may set a double key combination e.g. *Ctrl-K*, *Ctrl-H* by using **Add** button.

Hotkeys mapping may be saved as a scheme. Manage the schemes using **Save As...** and **Delete** buttons.

You can export Key mapping scheme into various formats via **Export Data Wizard**, that can be called by pressing **Export** button.

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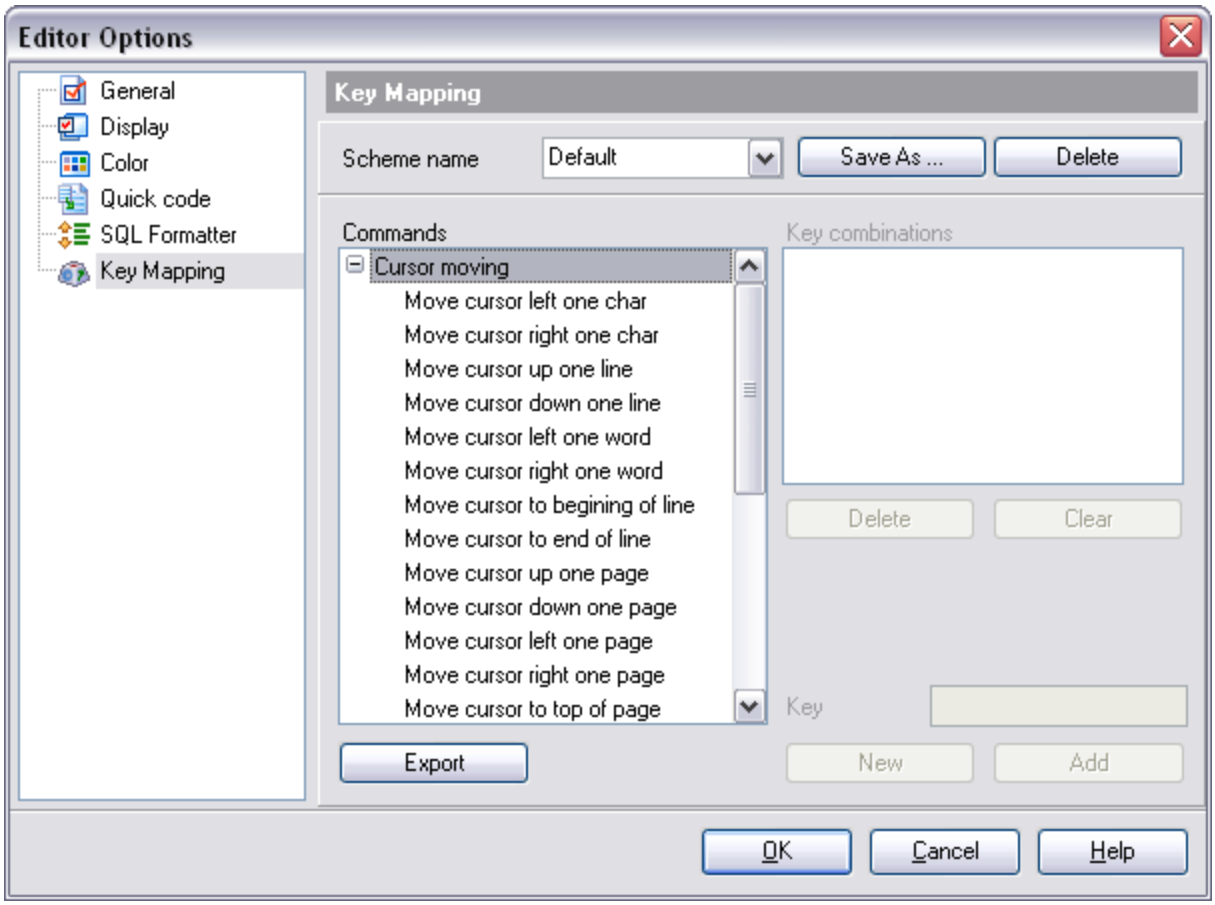

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12.3 Visual Options

This window allows you to customize the application interface style to your liking. To open this window select the **Options | Visual Options** menu item.

Use **Scheme Name** to select the interface scheme you like: Office XP style, Windows XP native style, etc. You can create your own interface schemes by customizing any visual options you like on the appropriate tabs (**Bars and Menus**, **Trees and Lists**, **Edit Controls**, **Check Boxes, Buttons,** etc.) and clicking the **Save As** button.

All the customizing you make is displayed on the Sample panel.

- Bars and menus
- Trees and lists
- Edit controls
- Check boxes
- Buttons
- Page controls
- Group boxes
- Splitters
- Navigation bar

12.3.1 Bars and Menus

Use the **Bars and menus** tab to customize SQL Manager 2007 for Oracle toolbars style and menus animation.

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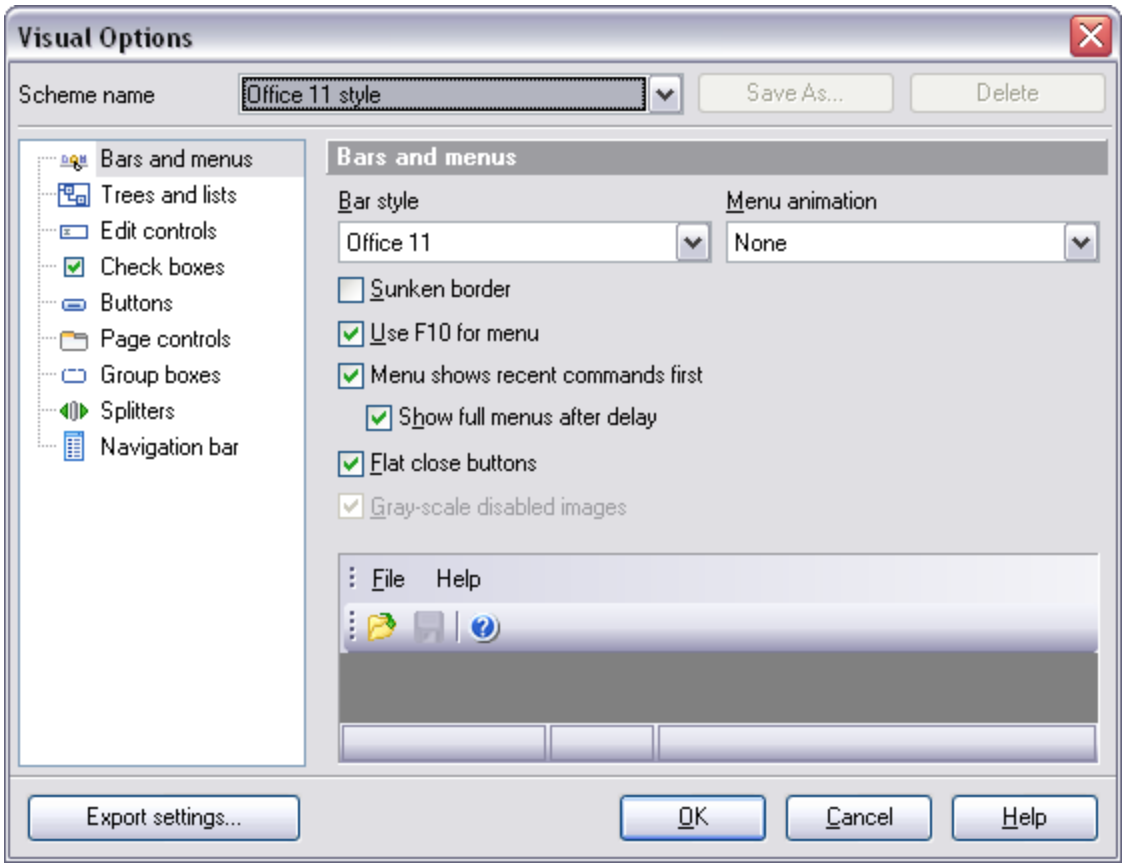

12.3.2 Trees and Lists

Use the **Trees and lists** tab to select various tree view options.

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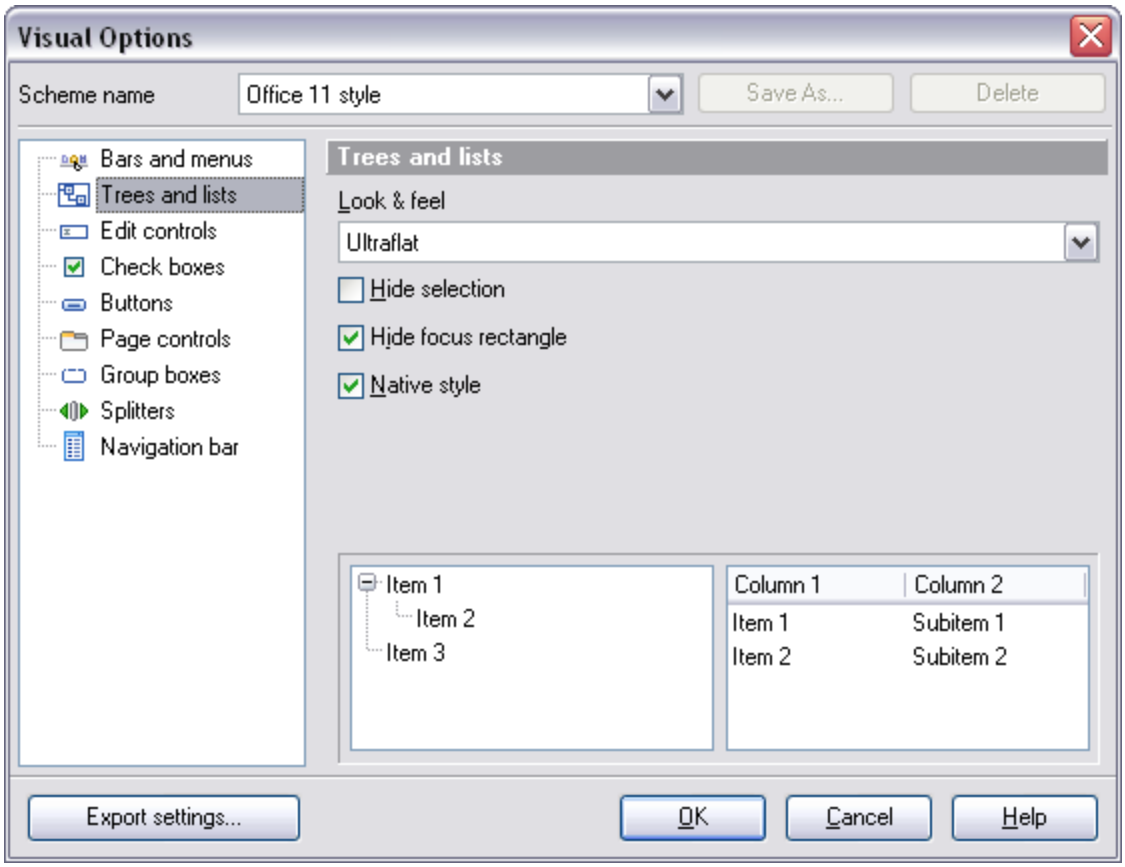

12.3.3 Edit controls

Use the **Edit controls** to customize the appearance of different SQL Manager 2007 for Oracle edit controls.

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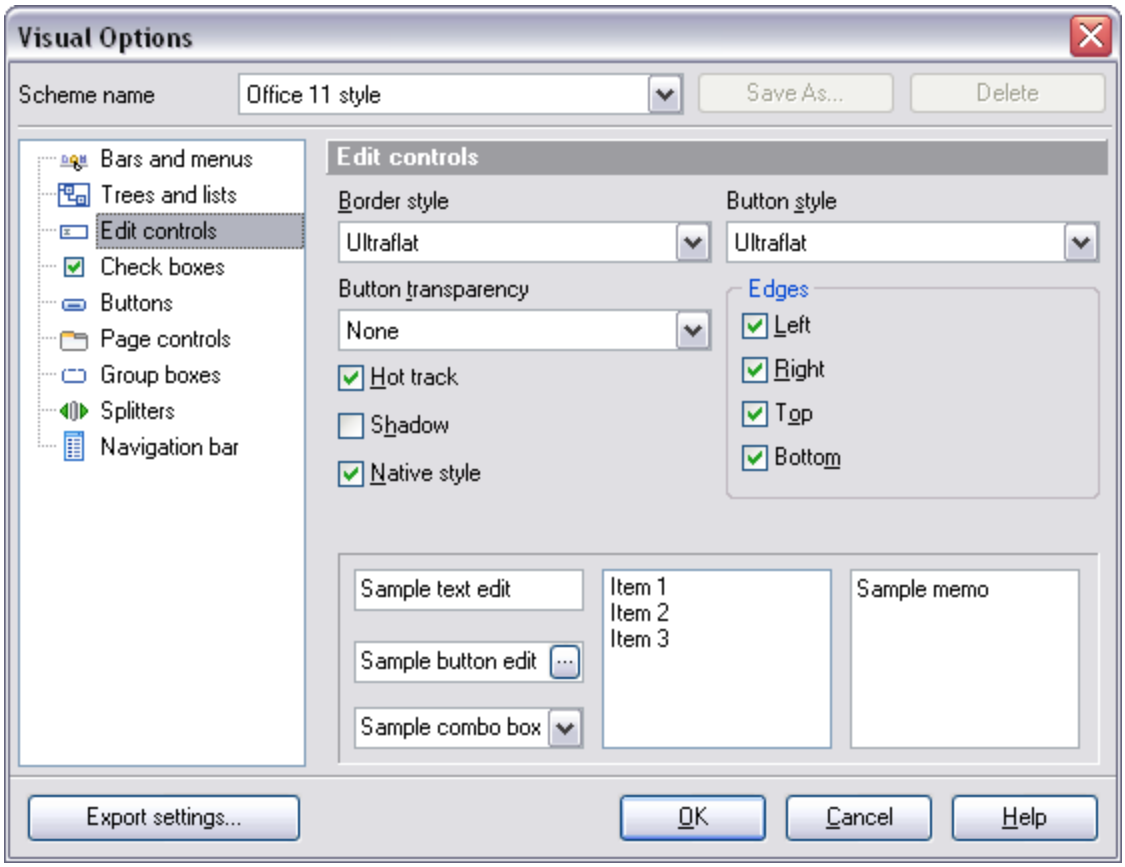

12.3.4 Check boxes

The **Check boxes** tab allows you to customize the appearance of check boxes and radio buttons.

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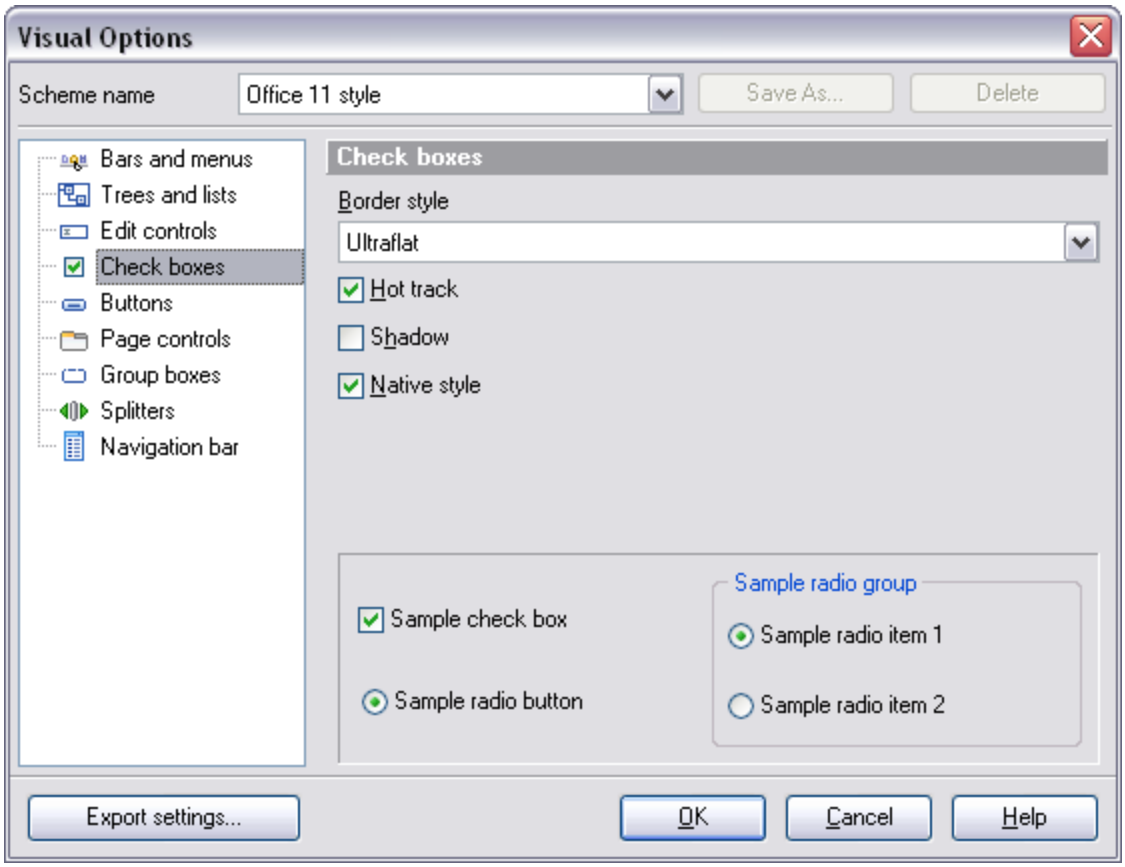

12.3.5 Buttons

Use the **Buttons** tab to customize SQL Manager 2007 for Oracle buttons.

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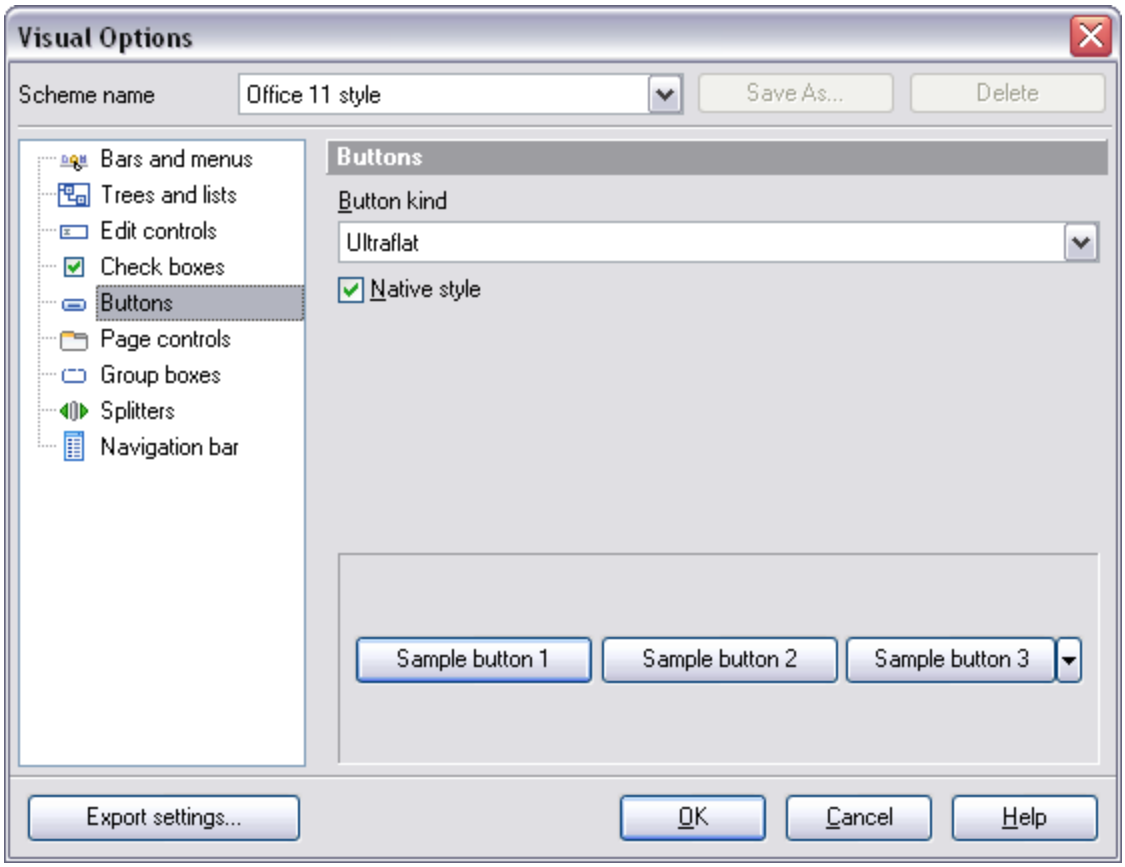

12.3.6 Page controls

The **Page controls** tab allows you to customize the style of all SQL Manager 2007 for Oracle page controls.

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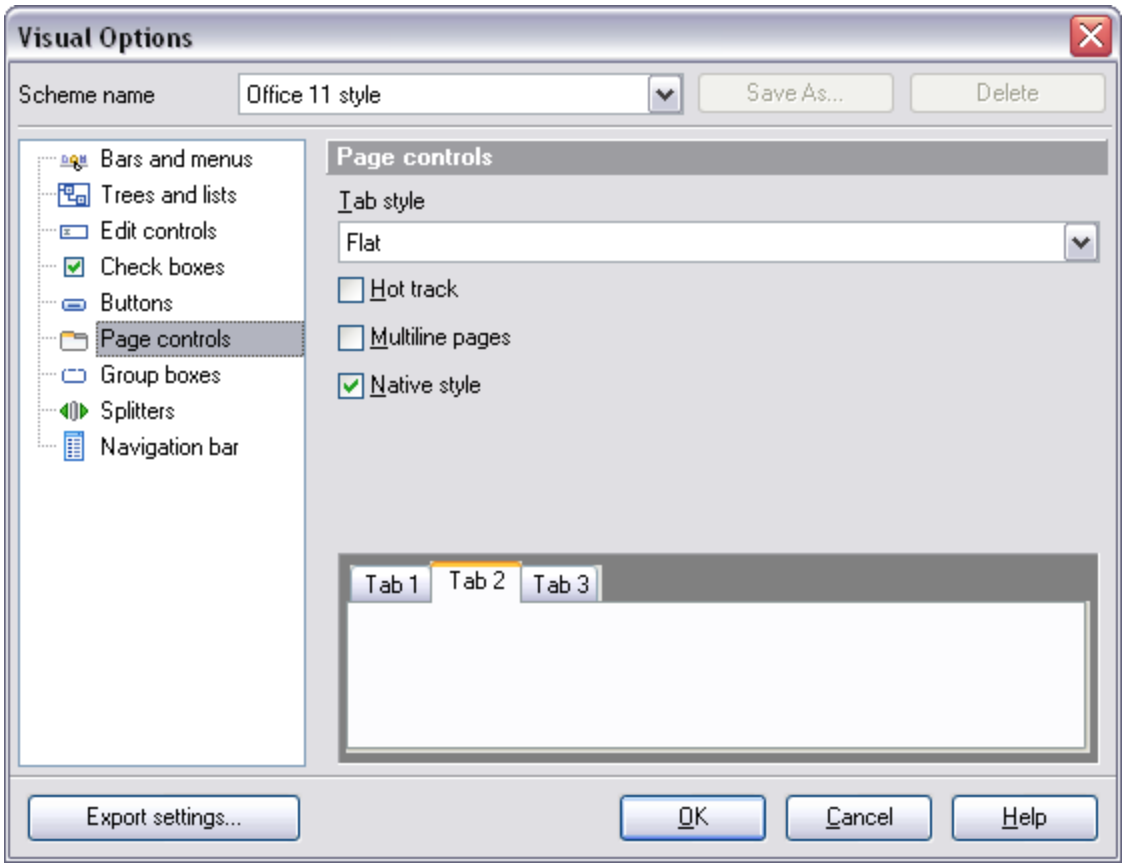

12.3.7 Group boxes

Use the **Group boxes** tab to customize all SQL Manager 2007 for Oracle group boxes to your liking.

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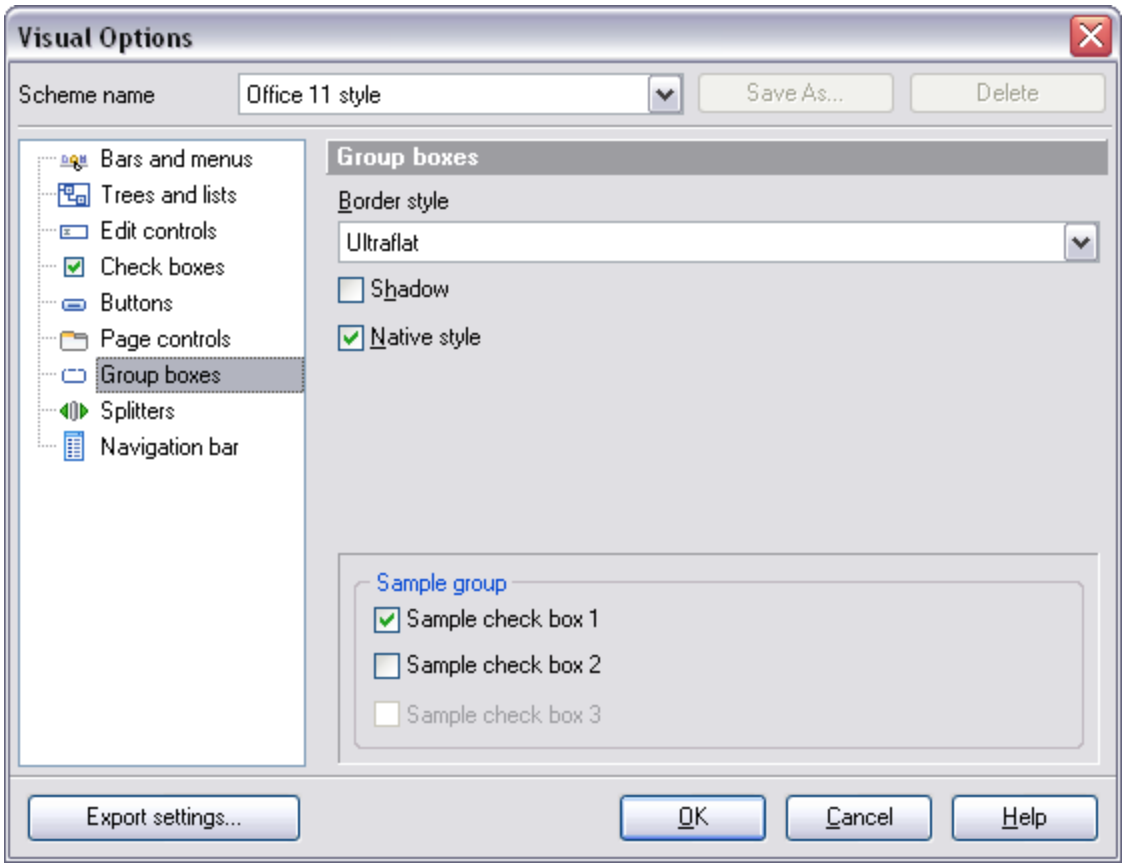

12.3.8 Splitters

Use the **Splitters** tab to customize all SQL Manager 2007 for Oracle splitters to your liking.

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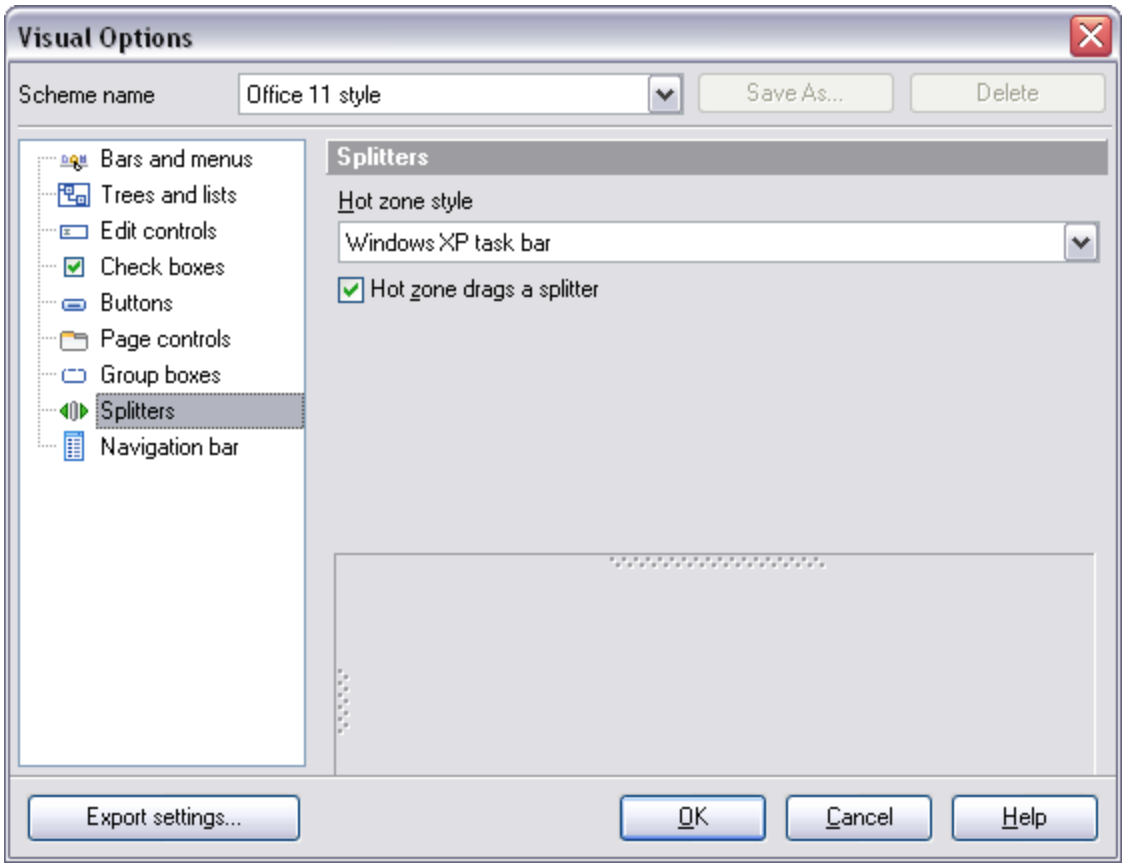

12.3.9 Navigaton bar

Use the **Navigation bar** tab to customize all SQL Manager 2007 for Oracle navigation bars to your liking.

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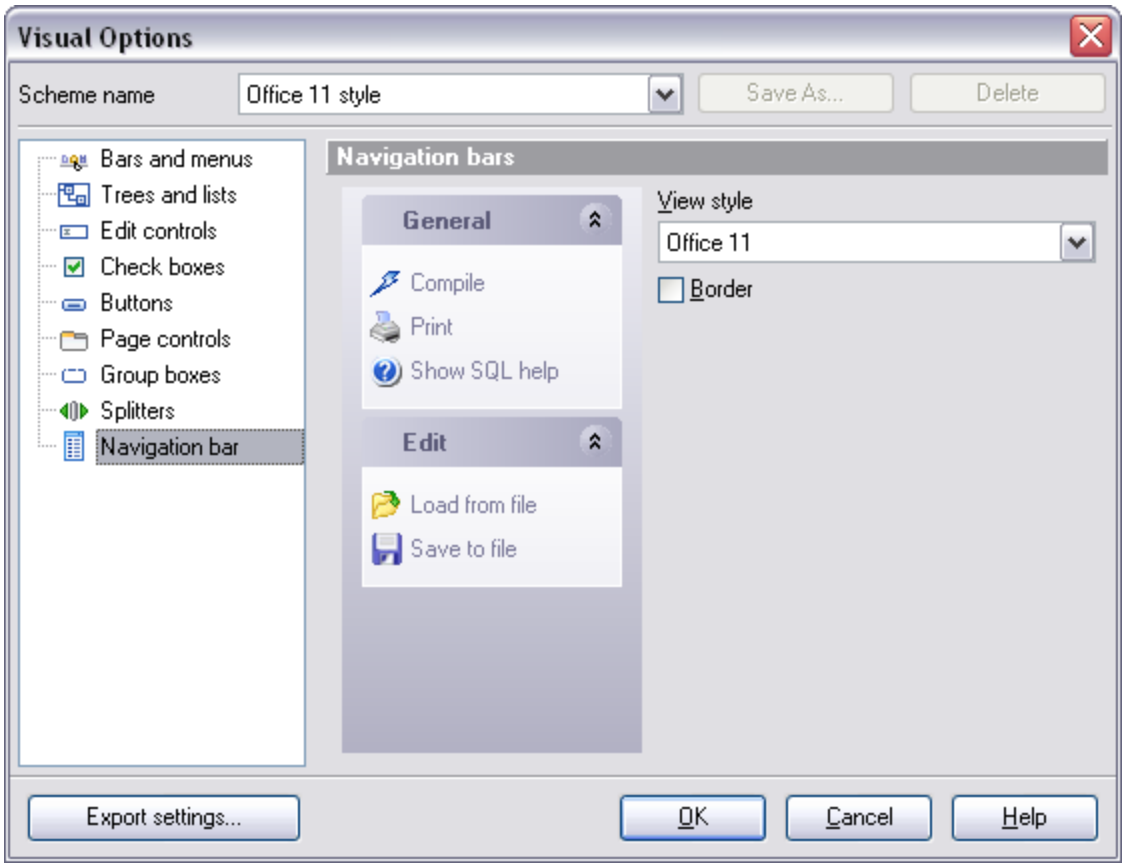

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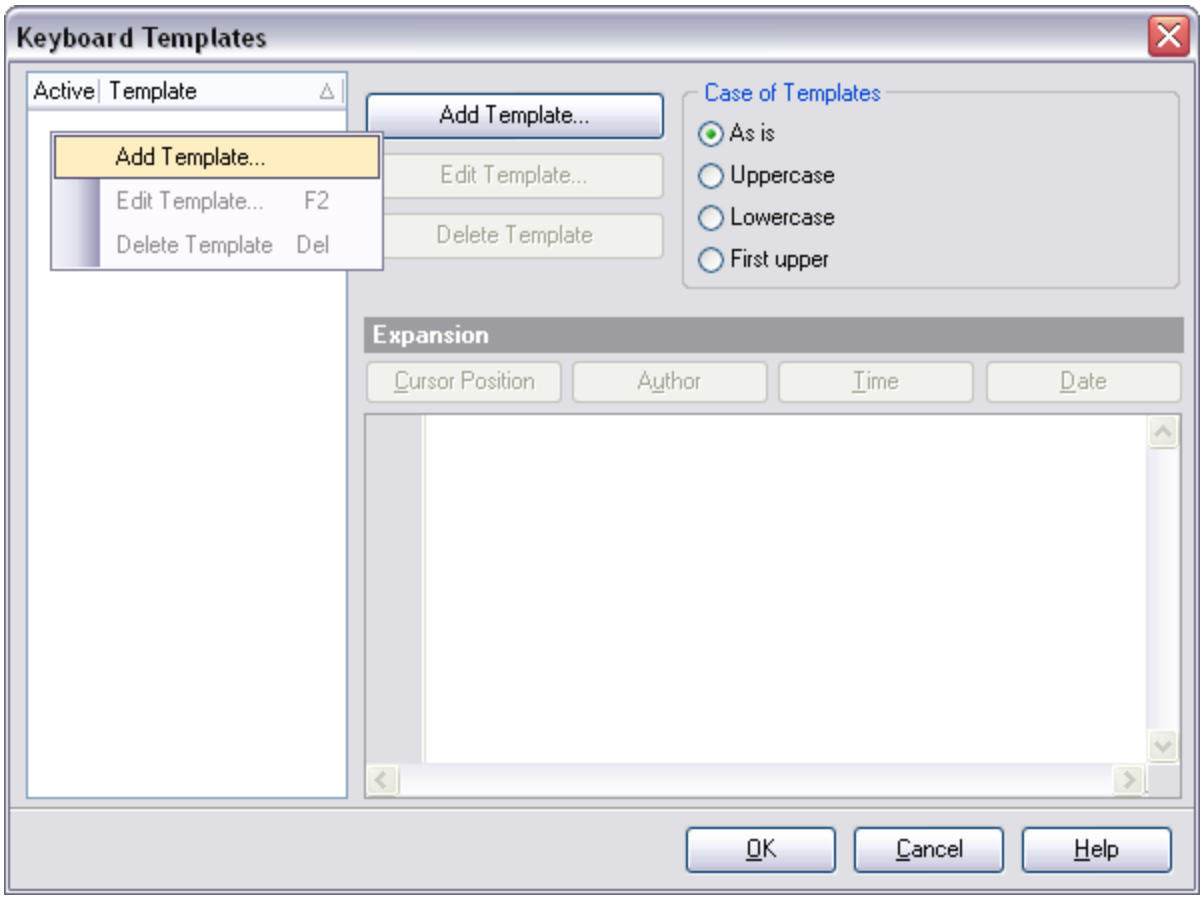
12.4 Keyboard Templates

The **Keyboard Templates** window allows you to create new keyboard templates for quicker typing regularly met expressions and to edit the existing ones. To call this window select the **Options | Keyboard Templates** menu item from the popup menu.

You can deactivate the existing template by choosing it from the list at the left of the window and removing flag from its name. Also you can edit template name, using button **Edit**, delete a template, using button **Delete** and edit template expression in the right part of the window. For faster editing you can use buttons **Cursor Position**, **Author**, **Time**, **Date**.

To add a new template, click **Add**, set the template name and define the template expression. In the upper left corner of the window you can choose the case of the template expression.



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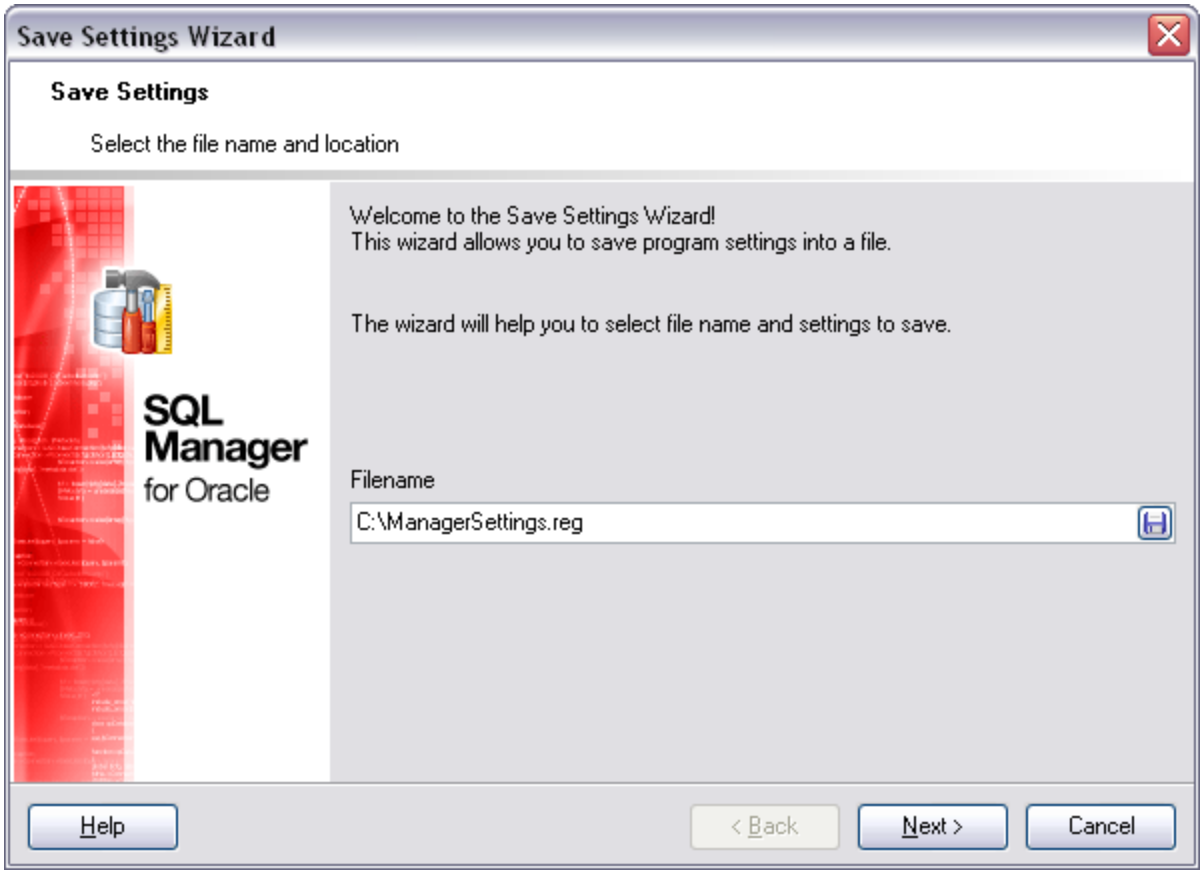
12.5 Save Settings

Save Settings Wizard allows you to export SQL Manager 2007 for Oracle settings wholly or partially to a single *.reg file, which you can apply to SQL Manager 2007 for Oracle installed on another machine or use to backup previous settings. To open the wizard select the **Options | Save Settings** menu item.

- Specifying destination file
- Selecting settings
- Selecting databases
- Saving settings


Save Settings Wizard
Save Settings
Select the file name and location
Welcome to the Save Settings Wizard!
This wizard allows you to save program settings into a file.
The wizard will help you to select file name and settings to save.
SQL Manager for Oracle
Filename
C:\ManagerSettings.reg
Help
< Back
Next >
Cancel

12.5.1 Specifying destination file

Specify a ***.reg** file to save SQL Manager 2007 for Oracle settings to.

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Save Settings Wizard
Save Settings
Select the file name and location
Welcome to the Save Settings Wizard!
This wizard allows you to save program settings into a file.
The wizard will help you to select file name and settings to save.
SQL Manager for Oracle
Filename
C:\ManagerSettings.reg
Help
< Back
Next >
Cancel

12.5.2 Selecting settings

The options of this step specify the information saved to the result file, e.g. Database Registration Info, Environment options, etc.

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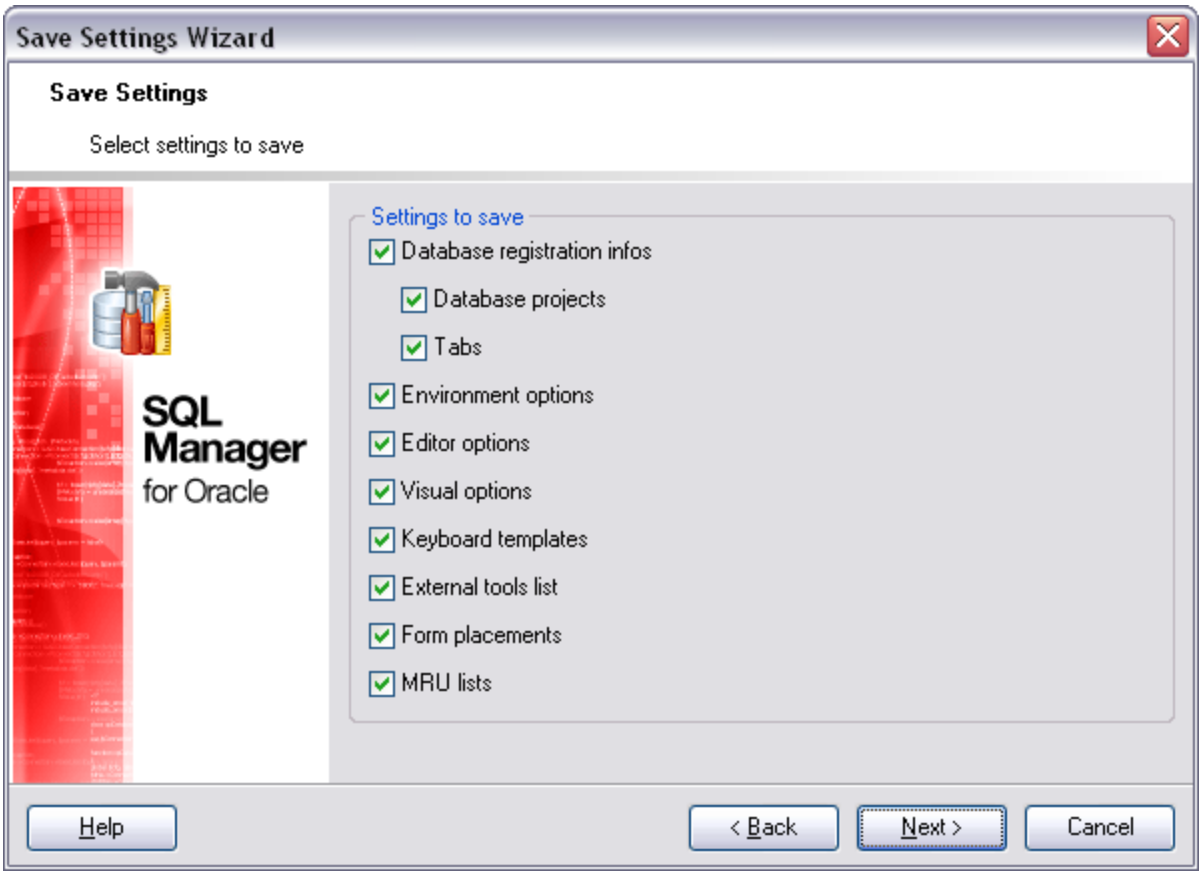

12.5.3 Selecting databases

Select registered databases to save their settings by moving them from the **Available Databases** list to **Selected Databases**.

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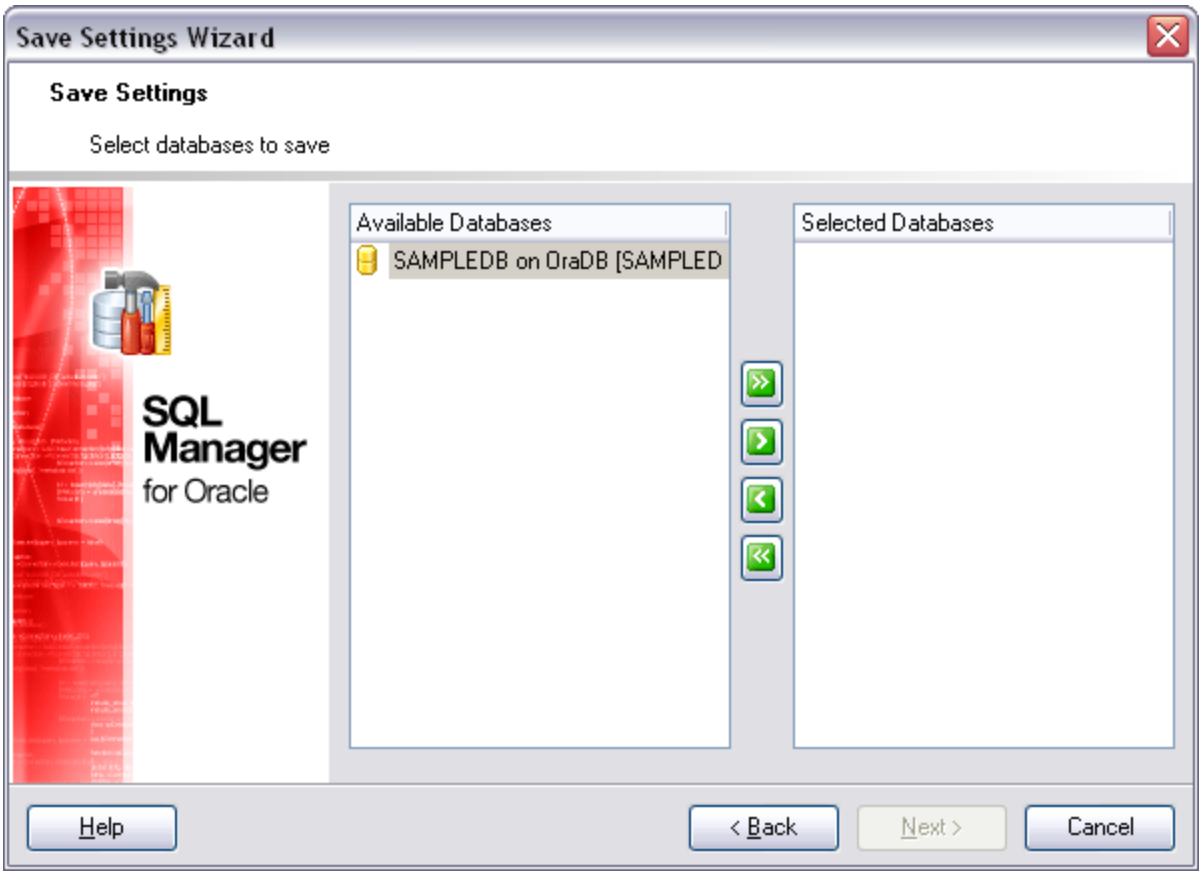

12.5.4 Saving settings

Click **Finish** button to start the extracting.

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Save Settings Wizard
Save Settings
Ready to save. Click the Finish button to save settings.
Wizard is now ready to save program settings into a file
Click "Finish" to start saving.
SQL Manager for Oracle
Help
< Back
Finish
Cancel

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Part XIII

13 External Tools

You can add external programs to SQL Manager 2007 for Oracle to make it more effective.

Adding External Tool

To add an external program:

- Select the **Options | External Tools** menu item.
- Click **Add...** button in the External Tools dialog.
- Click the button next to the **Program** box to select the program *.exe file, or set the program execution file manually in this box.
- Set the program title, hot key, working directory and execution parameters if necessary in the proper boxes of the External Tool Info Editor.
- Click **OK** in the External Tool Info Editor and External Tools dialogs.

This adds the icon and the title of the program you selected to the **Tools | External Tools** submenu. Now you can run this tool quickly without stopping work with SQL Manager 2007 for Oracle.

Removing External Tool

To remove an external program:

- Select the **Options | External Tools** menu item.
- Select the tool to remove from the **Tools** list in the External Tools dialog.
- Click **Delete** button.
- Click **OK** to confirm removing the tool and closing the dialog.

The selected tool is removed and is no longer accessible from the **Tools | External Tools** submenu.

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13.1 External Tools Window

The **External Tools** window allows you to add executable programs to the **Tools | External Tools** menu to access them quickly from SQL Manager 2007 for Oracle. To call this window select the **Options | External Tools** menu item.

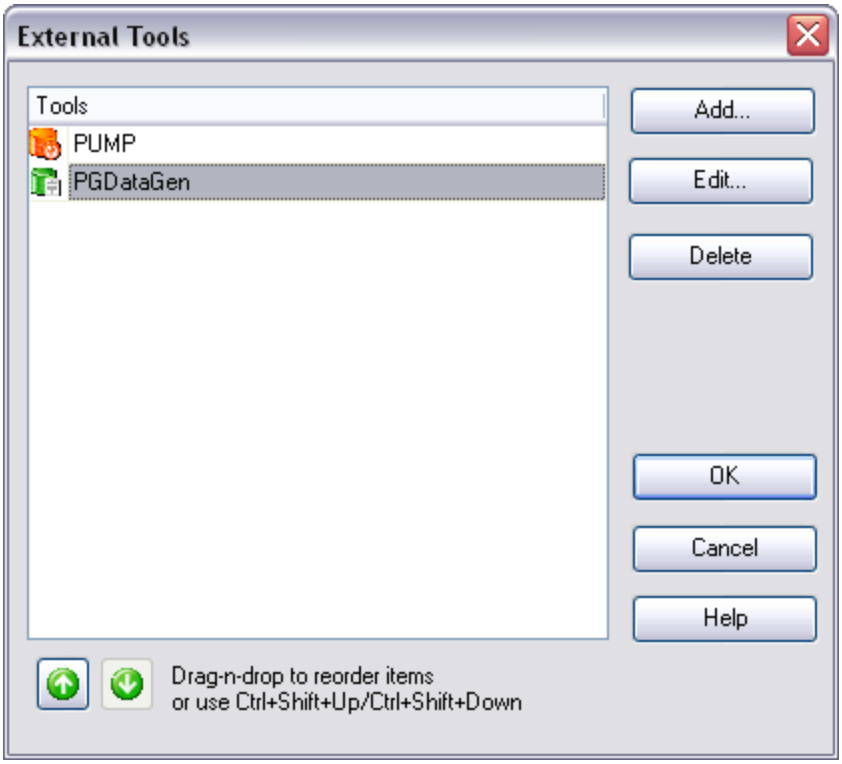
Tools
Lists all added external tools.

Add
Opens External Tool Info Editor for adding a new tool.

Edit
Opens External Tool Info Editor for editing title, .exe file, hot key, working directory or execution parameter of the tool, selected in the **Tools** list box.

Delete
Removes the selected tool from the list of SQL Manager 2007 for Oracle external tools.

To change the order of tools in the list use the arrow buttons below the list box or press buttons Shift+Ctrl+Up / Shift+Ctrl+Down on the keyboard. You can also drag items in the list box to change their positions.



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13.2 External Tool Info Editor

The **External Tool Info Editor** window allows you to set the parameters of calling the external program from SQL Manager 2007 for Oracle. This window is available on adding or editing the external tool (see Add External Tool and External Tools).

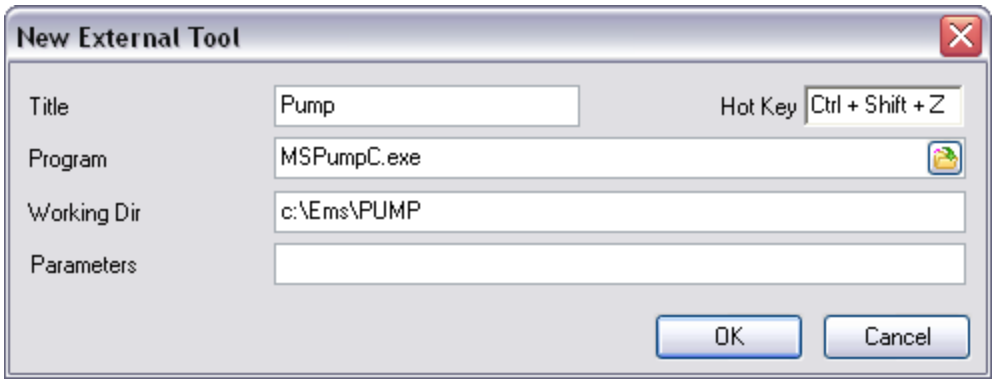
Title
Title displayed in the **Tools | External Tools** submenu for calling the tool.

Hot Key
Press a key or a key combination on the keyboard to set it as a hot key for the tool.

Program
Full path to the program *.exe file.

Working Dir
Program default directory.

Parameters
Parameters for executing the program.



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Part

14 Localization

SQL Manager 2007 for Oracle provides multi-language interface support. You can change the program language easily, edit existing localizations, and create your own localization files.

Changing Program Language

To select the program interface language:

- Select the **Options | Select Program Language** menu item.
- Select the interface language in the Select Program Language dialog.
- Click **OK** to close the dialog.

Editing Program Localization

To edit the interface localization:

- Open one of the program windows (e.g. Table Editor, SQL Editor) to edit the localization of its captions and hints.
- Press Shift+Ctrl+L on the keyboard to open Localization Editor window.
- Edit window captions and hints as you like.
- Click **Save** button on the toolbar.

Note that the Localization Editor window is available only if the selected language is different than default.

Creating New Localization

To create a new localization:

- Create a new localization file similar to one of those situated in the $(SQL Manager 2007 for Oracle)\Languages folder.
- Select the **Options | Environment Options** menu item.
- Open the Environment Options | Localization dialog tab.
- Click **Add** button on this tab.
- Set the language name and the path to the new *.lng file in the dialog window.

The new language is added to the list of available languages. Now you can set it as a program interface language via the Select Program Language dialog or the Localization tab of the Environment Options.

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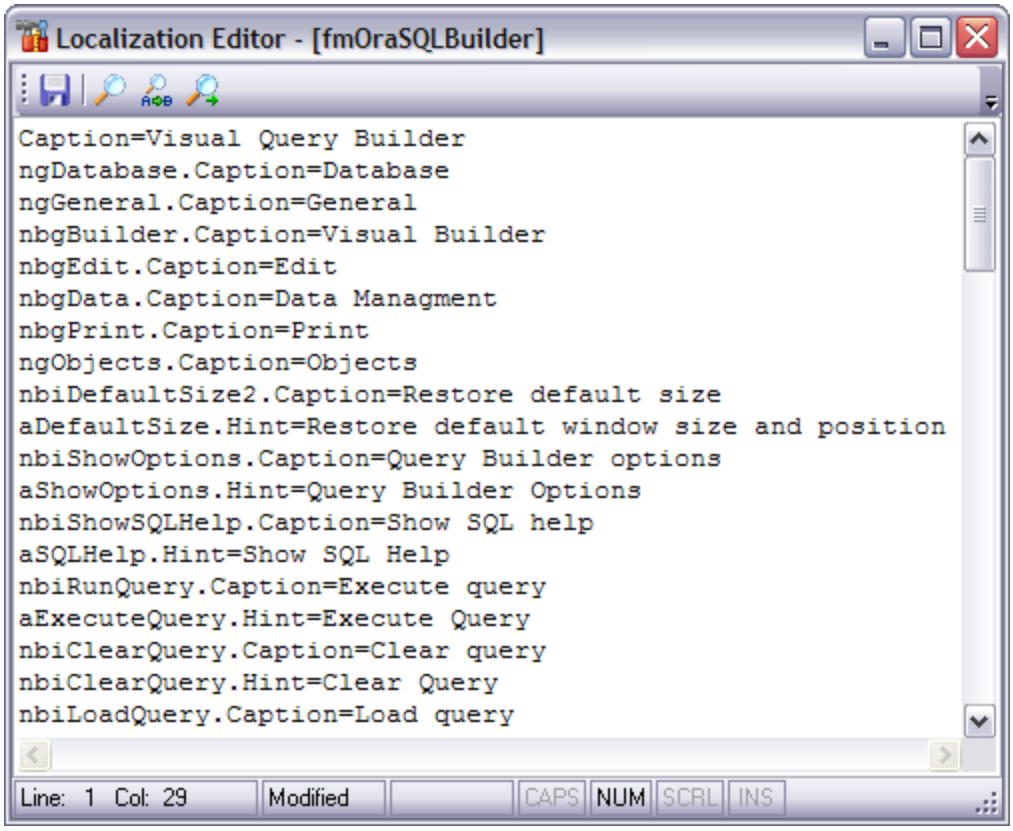
14.1 Localization Editor

The **Localization Editor** window allows you to edit the captions and hints of any SQL Manager window, if the selected program language is different from the default one.

To call this window, use the *Shift+Ctrl+L* shortcut in any child window of SQL Manager 2007 for Oracle.

The working area of the window contains the element names and the corresponding strings divided by the "**=**" character. These strings are what you see in the program as menu items, window captions, button hints, etc. Edit them to change the program appearance. Be careful and do not edit the identifiers that stand before the "**=**" character - this will not produce any effect.

For your convenience the **Find** and **Replace** features are provided - the corresponding toolbar buttons are used to call the Find Text dialog or the Replace Text dialog respectively. The **Search Again** button enables the repeated search for the text that was last searched.



When you are done with editing, click the **Save** button on the toolbar to apply the changes you have made.

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See also:

Select Program Language

Localization

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14.2 Select Program Language

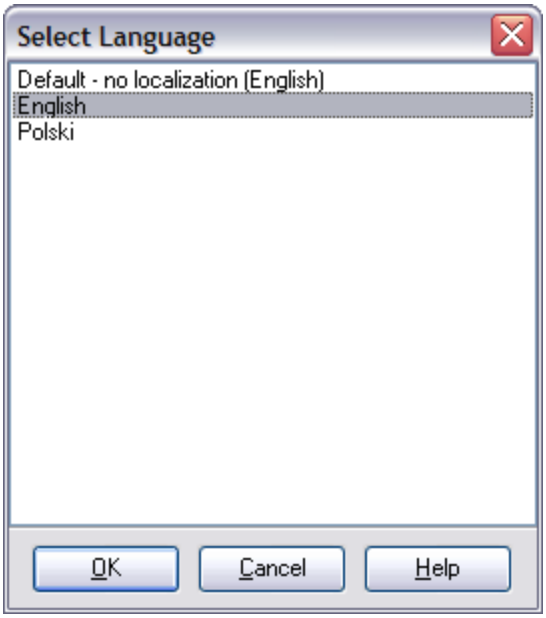
The **Select Language** dialog allows you to select a language for SQL Manager 2007 for Oracle localization.

To open this dialog, select the **Options | Select Program Language...** main menu item.

The dialog displays the list of available languages configured on the Environment Options | Localization page. Select a language from the list and click **OK** to confirm your choice and close the dialog.

See also:

Environment Options | Localization



See also:

Localization Editor

Localization

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Part

15 How to...

15.1 Work with Database Objects

15.1.1 Work with Users

15.1.1.1 Create User

A database user is a security principal enabling object access permission control at the finest level of granularity. A user represents a single SQL Server login within the scope of the database in which the user is defined.

Create user

To create a new user:

- Select the **Database | New Object...** menu item.
- Select **User** in the New Object dialog.
- Edit user definition within the User Editor.

Hint: To create new user you can also right-click the **Users** node of the explorer tree and select the **New User...** item from the popup menu.

To create a new user with the same properties as one of the existing users has:

- Select the **Database | Duplicate Object...** menu item.
- Follow the instructions of the Duplicate Object Wizard.

Edit user

To edit the existing user:

- Select the user for editing in the explorer tree (type the first letters of the user name for quick search).
- Right-click and select the **Edit User <User_Name>** item from the popup menu or simply double-click the user.
- Edit user definition and data on the appropriate tabs of the User Editor.

To change the name of the user:

- Select the user to rename in the explorer tree.
- Right-click and select the **Rename User <User_Name>** item from the popup menu.
- Edit user name in the dialog window.

Drop user

To drop a user:

- Select the user to drop in the explorer tree.
- Right-click and select the **Drop User <User_Name>** item from the popup menu.

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- Confirm dropping in the dialog window.

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Part XVI

16 Appendix

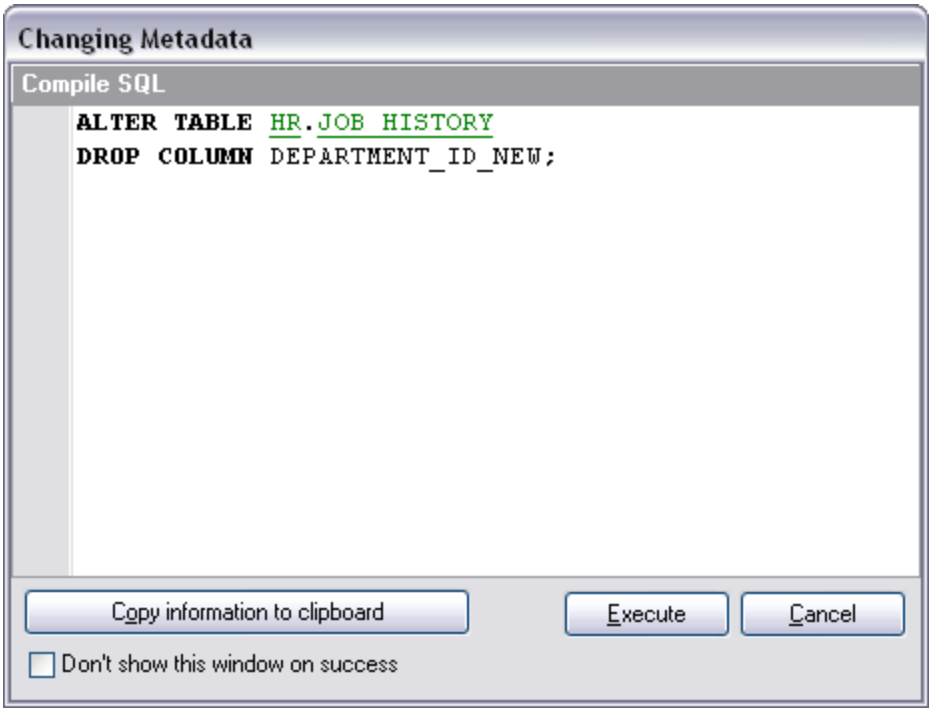
16.1 Changing Metadata window

The **Changing Metadata** window is used to trace the errors and edit SQL statements during their compilation. The compilation window appears each time metadata is changed, both when the compilation is successful and when there are compilation errors. To hide this window for successful metadata changes, select the **Don't show this window on success** option.

Compile SQL
This area displays the SQL statement pending to be executed to perform metadata changing. In this area you can view and edit the SQL statement.
In case of a compilation error the **Error** tab also becomes visible - here you can view the error description returned by the server.

Commit
This button starts execution of the statement(s). Click it to commit the current transaction. This button is available only if there were no errors in compilation.

Rollback
This button cancels the script execution and allows you to return to the previous stage (editor window or DB Explorer).



If necessary, you can **copy information to clipboard** and save it in a text editor afterwards (the button is only enabled when a compilation error occurs).

If you want this window to appear only in case of an error, uncheck the **Confirm**

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metadata changing (Changing Metadata Window) option (checked by default) available within the **Confirmations** section of the Environment Options dialog.

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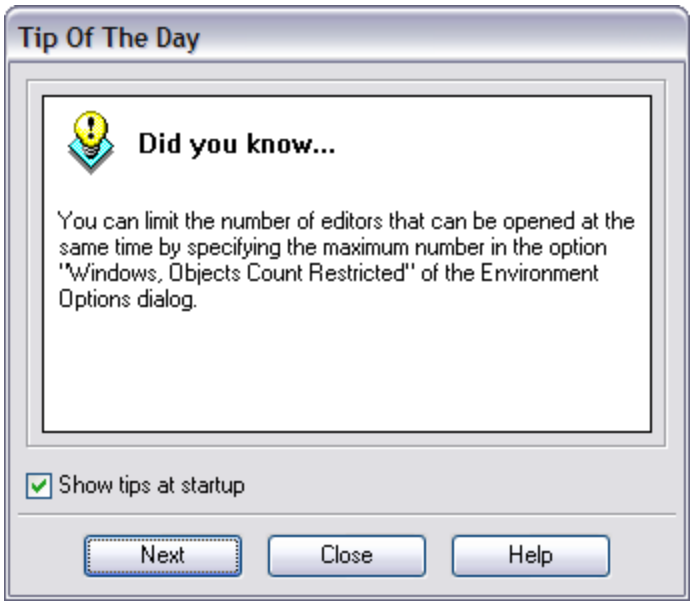
16.2 Tip of the Day

This window allows you to see short messages notifying you about interesting particularities and useful features of SQL Manager 2007 for Oracle.

To open this window, select the **Help | Tip of the Day** main menu item.


Tip Of The Day
Did you know...
You can limit the number of editors that can be opened at the same time by specifying the maximum number in the option "Windows, Objects Count Restricted" of the Environment Options dialog.
Show tips at startup
Next
Close
Help

If you check the **Show tips at startup** option, this window will popup each time you start SQL Manager 2007 for Oracle.

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16.3 Find Text dialog

The **Find Text** dialog is provided for quick and flexible searching for specified text within the working area of SQL Manager editors.

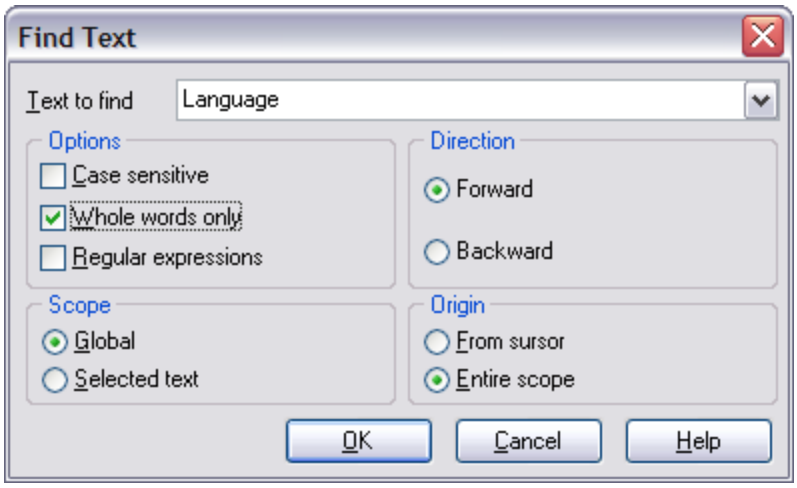
Text to find
Enter a search string in this box. The Arrow-Down button which can be found next to the input box allows you to select any of the previously entered search strings.

Options

Case Sensitive
This option can be used to differentiate uppercase characters from lowercase ones during the search process.

Whole words only
Use this option to search for words only (with this option off, the search string might be found within longer words.)

Regular Expressions
Recognizes regular expressions in the search string.



Direction

Forward
Searches from the current position to the end of the working area.

Backward
Searches from the current position to the beginning of the working area.

Scope

Global
Searches within the entire working area, in the direction specified by the *Direction* setting.

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Selected text
Searches only within the currently selected text, in the direction specified by the *Direction* setting. You can use the mouse or block commands to select a block of text.

Origin

From cursor
The search starts at the cursor's current position, and then proceeds either forward to the end of the scope, or backward to the beginning of the scope depending on the *Direction* setting.

Entire scope
The search covers either the entire block of selected text or the entire script (no matter where the cursor is in the Editor area) depending upon the *Scope* options.

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16.4 Replace Text dialog

The **Replace Text** dialog is provided for searching and replacing text within the working area of SQL Manager editors.

Text to find
Enter a search string in this box. The Arrow-Down button which can be found next to the input box allows you to select any of the previously entered search strings.

Text to replace
This box allows you to enter a string to replace the search string. The Arrow-Down button which can be found next to the input box allows you to select any of the previously entered strings. To replace the search string with an empty string, leave this input box blank.

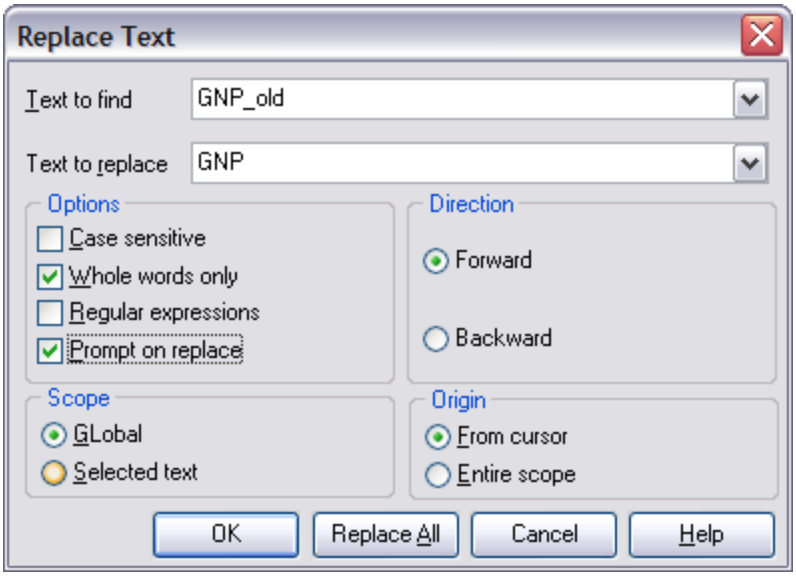
Options

Case Sensitive
This option can be used to differentiate uppercase characters from lowercase ones during the search process.

Whole words only
Use this option to search for words only (with this option off, the search string might be found within longer words.)

Regular Expressions
Recognizes regular expressions in the search string.

Prompt on replace
Check this option if you wish to be prompted before replacing upon each occurrence of the search string. When this option is off, the search string is replaced automatically.



Direction

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Forward
Searches and replaces from the current position to the end of the working area.

Backward
Searches and replaces from the current position to the beginning of the working area.

Scope

Global
Searches and replaces within the entire working area, in the direction specified by the *Direction* setting.

Selected text
Searches and replaces only within the currently selected text, in the direction specified by the *Direction* setting. You can use the mouse or block commands to select a block of text.

Origin

From cursor
The search and replace process starts at the cursor's current position, and then proceeds either forward to the end of the scope, or backward to the beginning of the scope depending on the *Direction* setting.

Entire scope
The search and replace process covers either the entire block of selected text or the entire script (no matter where the cursor is in the Editor area) depending upon the *Scope* options.

Click the **Replace All** button to replace every occurrence of the search string. If you have checked the **Prompt on replace** option, the confirmation dialog box appears upon each occurrence of the search string.

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16.5 Format Specifiers

The following format specifiers are supported in the format string:

Float/Integer format

0
Digit place holder. If the value being formatted has a digit in the position where the '0' appears in the format string, then that digit is copied to the output string. Otherwise, a '0' is stored in that position in the output string.

#
Digit placeholder. If the value being formatted has a digit in the position where the '#' appears in the format string, then that digit is copied to the output string. Otherwise, nothing is stored in that position in the output string.

.
Decimal point. The first '.' character in the format string determines the location of the decimal separator in the formatted value; any additional '.' characters are ignored.

,
Thousand separator. If the format string contains one or more ',' characters, the output will have thousand separators inserted between each group of three digits to the left of the decimal point. The placement and number of ',' characters in the format string does not affect the output, except to indicate that thousand separators are wanted.

E+
Scientific notation. If any of the strings 'E+', 'E-', 'e+', or 'e-' are contained in the format string, the number is formatted using scientific notation. A group of up to four '0' characters can immediately follow the 'E+', 'E-', 'e+', or 'e-' to determine the minimum number of digits in the exponent. The 'E+' and 'e+' formats cause a plus sign to be output for positive exponents and a minus sign to be output for negative exponents. The 'E-' and 'e-' formats output a sign character only for negative exponents.

Date/Time format

c
Displays the date using the format using the Short Date Format, followed by the time using the Long Time Format. The time is not displayed if the date-time value indicates midnight precisely.

d
Displays the day as a number without a leading zero (1-31).

dd
Displays the day as a number with a leading zero (01-31).

ddd
Displays the day as an abbreviation (Sun-Sat) using the strings of the Short Day Names.

dddd

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Displays the day as a full name (Sunday-Saturday) using the strings of the Long Day Names.

ddddd
Displays the date using the Short Date Format.

dddddd
Displays the date using the Long Date Format.

e
Displays the year in the current period/era as a number without a leading zero (Japanese, Korean and Taiwanese locales only).

ee
Displays the year in the current period/era as a number with a leading zero (Japanese, Korean and Taiwanese locales only).

g
Displays the period/era as an abbreviation (Japanese and Taiwanese locales only).

gg
Displays the period/era as a full name. (Japanese and Taiwanese locales only).

m
Displays the month as a number without a leading zero (1-12). If the m specifier immediately follows an h or hh specifier, the minute rather than the month is displayed.

mm
Displays the month as a number with a leading zero (01-12). If the mm specifier immediately follows an h or hh specifier, the minute rather than the month is displayed.

mmm
Displays the month as an abbreviation (Jan-Dec) using the strings given of the Short Month Names.

mmmm
Displays the month as a full name (January-December) using the strings of the Long Month Names.

yy
Displays the year as a two-digit number (00-99).

yyyy
Displays the year as a four-digit number (0000-9999).

h
Displays the hour without a leading zero (0-23).

hh
Displays the hour with a leading zero (00-23).

n
Displays the minute without a leading zero (0-59).

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nn
Displays the minute with a leading zero (00-59).

s
Displays the second without a leading zero (0-59).

ss
Displays the second with a leading zero (00-59).

z
Displays the millisecond without a leading zero (0-999).

zzz
Displays the millisecond with a leading zero (000-999).

t
Displays the time using the Short Time Format.

tt
Displays the time using the Long Time Format.

am/pm
Uses the 12-hour clock for the preceding h or hh specifier, and displays 'am' for any hour before noon, and 'pm' for any hour after noon. The am/pm specifier can use lower, upper, or mixed case, and the result is displayed accordingly.

a/p
Uses the 12-hour clock for the preceding h or hh specifier, and displays 'a' for any hour before noon, and 'p' for any hour after noon. The a/p specifier can use lower, upper, or mixed case, and the result is displayed accordingly.

ampm
Uses the 12-hour clock for the preceding h or hh specifier, and displays the contents of the TimeAMString global variable for any hour before noon, and the contents of the TimePMString global variable for any hour after noon.

/
Displays the date separator character using the Date Separator.

:
Displays the time separator character using the Time Separator.

'xx'/"xx"
Characters enclosed in single or double quotes are displayed as-is, and do not affect formatting.

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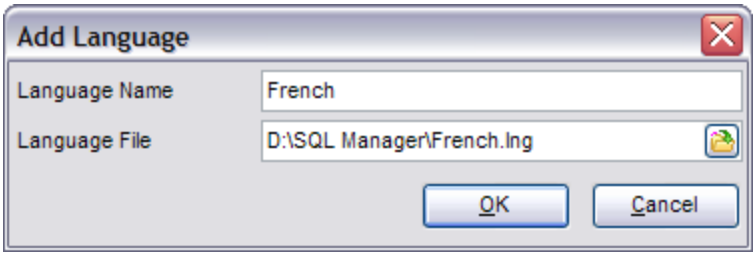
16.6 Language Info Editor

The **Language Info Editor** dialog allows you to set the language name and specify the corresponding **.lng* localization file. This dialog is opened when you add or edit a language (see Environment Options | Localization).

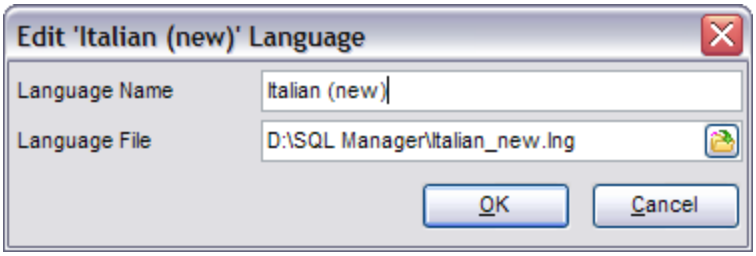
Language Name
The name of the language that is displayed in the Select Program Language dialog and within the **Available Languages** list of the Environment Options | Localization section.

Language File
The **.lng* file containing the translated string resources. See the *%program_directory%\Languages* folder to find already existing localization files.

Adding a language
The *Add language* dialog allows you to specify your own localization file and set the language name.



Editing a language
The *Edit language* dialog allows you to change the language name or select another localization file for the specified language.



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16.7 Using templates

For your convenience the ability to use templates is provided by SQL Manager 2007 for Oracle.

Instead of performing a long chain of routine steps all the time you can save all the options of the wizard for future use as a template file. Select the **Templates | Save Template** drop-down menu item, specify the template file name and set an optional comment for the template file.
When starting the wizard next time, you can load the template by selecting the **Templates | Load Template** drop-down menu item.

Note that saving/loading of templates is possible at any step of the wizard.

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16.8 Supported file formats

MS Excel
The most popular e-table format used by Microsoft® Excel (*.xls). The result files are fully compatible with Microsoft® Excel versions 97-2000, 2003 and XP.

MS Access
File of Microsoft® Access format (*.mdb) with an ADO connection used.

MS Word
One of the most popular text processing formats used by Microsoft® Word (*.doc). The result files are fully compatible with Microsoft® Word versions 97-2000, 2003 and XP.

RTF
Rich Text Format (*.rtf) supported by many text processing programs (e.g. WordPad).

HTML
Hyper Text Markup Language file format (*.html, *.htm), complete compatibility with HTML 4.0 specification.

PDF
A standard format in electronic publishing (*.pdf).

Text file
Plain text file format (*.txt).

CSV file
Comma-Separated Value file format (*.csv).

DIF file
Data Interchange File (*.dif) format.

SYLK
Symbolic Links (*.slk) file format.

Note: all the text formats including *Text file*, *CSV*, *DIF*, *SYLK* are usually used as working or interchange formats.

LaTeX
A specific file format (*.tex) which is a popular (especially among mathematicians and physicists) macroextension of *TeX* pack developed by D.Knut.

XML
A markup language for documents containing structured information (*.xml).

DBF
Database file format (*.dbf)used by dBASE and a number of xBASE applications.

MS Excel 2007
The contemporary e-table format used by Microsoft® Excel 2007 (*.xlsx). The result files are fully compatible with Microsoft® Excel 2007.

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MS Word 2007
The contemporary text processing format used by Microsoft® Word 2007 (*.*docx*). The result files are fully compatible with Microsoft® Word 2007.

ODF Spreadsheets
OASIS Open Document Format for Office Applications - open document file format for spreadsheets (*.*ods*) used by a number of applications including OpenOffice.org and KOffice.

ODF text
OASIS Open Document Format for Office Applications - open document file format for word processing (*.*odt*) documents used by a number of applications including OpenOffice.org and KOffice.

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16.9 To-Do List

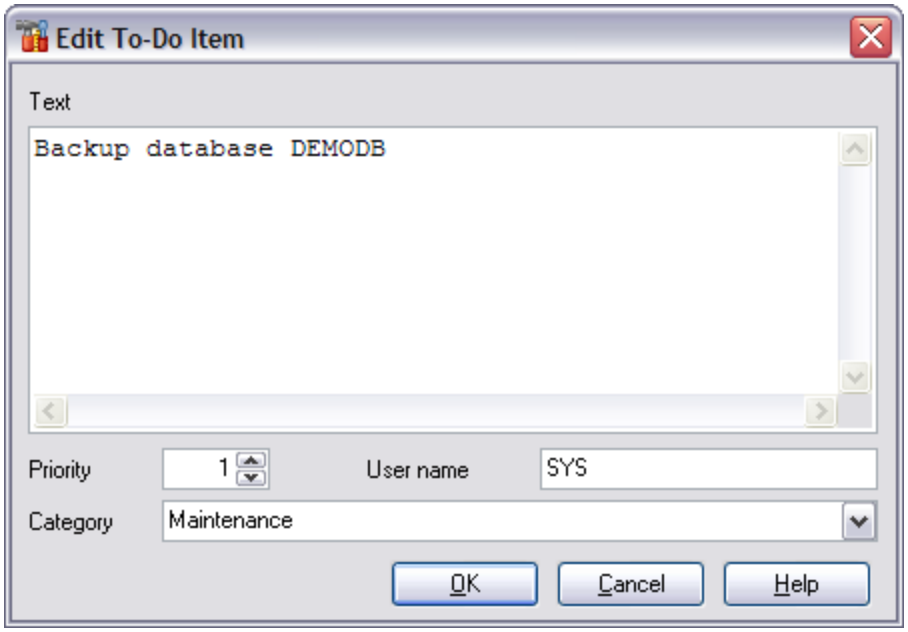
The **To-Do List** window allows you to make up a list of tasks for the database.

To call this window, select the **View | To-Do List** main menu item, or use the *Shift+Ctrl+T* shortcut.

The task list is displayed in a form of a grid. Its columns (*Action*, *Priority*, *User*, *Category*) correspond to the task parameters. Clicking the column caption to sort the task list by the current parameter or change the sorting direction.

Database
Select the database to apply the task list to. When switching between the databases you can view different task lists.

To add a task to this list, click the **Add Item** link of the Navigation bar, or select **Add Item** in the context menu. You can also use the *Ins* key for the same purpose. Define the task parameters and click **OK** to add the new task to the list.



Text
Optional text to describe the task.

Priority
Set a numeric value to indicate the priority of the task.

User Name
The database User name this task is applied to.

Category
Set a category for the task. Using categories may be useful for grouping tasks.

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To modify a task, select the task in the list and click the **Edit Item** link of the Navigation bar, or select **Edit Item** in the context menu. You can also use the *Enter* key for the same purpose.

To remove a task, select the task in the list and click the **Delete Item** link of the Navigation bar, or select **Delete Item** in the context menu. You can also use the *Del* key for the same purpose.

To remove all tasks from To-Do List, click the **Delete all** link of the Navigation bar, or select **Delete all** in the context menu. You can also use the *Ctrl+Del* shortcut for the same purpose.

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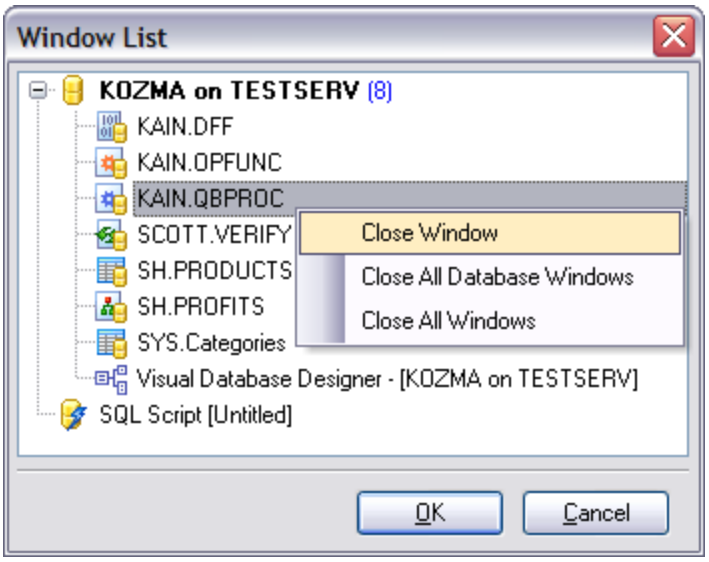
16.10 Window List

The **Window List** dialog allows you to browse the list of windows that are currently opened within SQL Manager 2007 for Oracle IDE.

To call this window, select the **Windows | Window List** main menu item, or use the *Ctrl+0* shortcut.



If necessary, you can right-click within the list area to call the popup menu which allows you to close the windows one by one or in groups.

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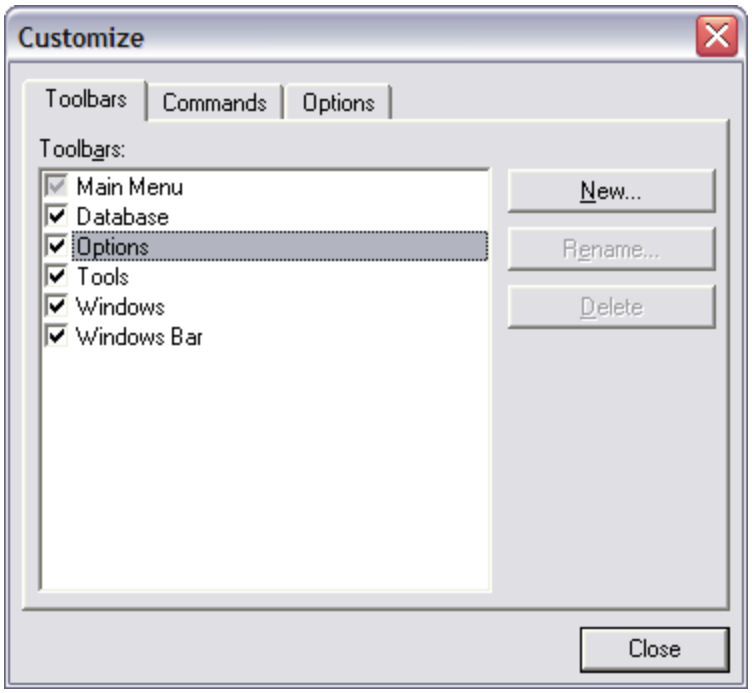
16.11 Customize Toolbars

The **Customize Toolbars** window allows you to select the buttons displayed on the SQL Manager 2007 for Oracle toolbars and change their positions.

To call this window, click the down-arrow button at the right-side of any toolbar, then click **Add or Remove Buttons** and select **Customize**.



Toolbars

Toolbars
The toolbars of the window from which the **Customize** was called. Click a box near the toolbar name to show or hide the toolbar.

New
Adds a new toolbar to the toolbar list and to the parent window.

Rename
Renames a user-created toolbar.

Delete
Deletes a user-created toolbar.

Commands

This tab allows you to view the list of all the commands available within toolbars of the parent window. Selecting categories in the **Categories** list box displays commands of the selected category (e.g. 'Database' or 'Tools') in the **Commands** list box. You can pick a command and drag it on any parent window toolbar to create a button for this command.

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Options

Menus show recently used commands first
With this option on the parent window menus drop-down containing only several items available, which have been used recently. To display full menus unselect this option.

Show full menus after a short delay
This option is available only if **Menus show recently used commands first** is on. It displays full menus after a few seconds of showing only recent items.

Reset my usage data
Resets the lists of recently used commands in the toolbars and menus.

Large Icons
Displays larger icons on the parent window toolbars.

Show ToolTips on toolbars
Shows tips on navigating to the toolbar button.

Show shortcut keys in ToolTips
Shows shortcuts for faster activating the corresponding commands in the button tips.

Menu animations
Select how menus appear in the parent window.

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Credits

Software Developers:

Alex Paclin

Alexey Butalov

Michael Kuzevanov

Alexey Saybel

Technical Writers:

Serge Slobodenyuk

Dmitry Doni

Olga Ryabova

Cover Designer:

Tatyana Makurova

Translators:

Anna Shulkina

Serge Fominikh

Team Coordinators:

Alexey Butalov

Alexander Chelyadin

Roman Tkachenko

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